# An Examination of the Links between the Pedagogical Culture of Primary Schools, School Effectiveness and School Improvement.

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# Abstract

This study examines the proposition that values and beliefs about teaching and learning are of critical importance in determining pupil outcomes. Using a sample of teaching staff from 32 primary schools, I attempt to identify these beliefs and their links with school effectiveness and school improvement. School effectiveness is measured in terms of pupil progress on Suffolk Reading Tests taken at 6+ and 8+ from 1994-6. Data about pedagogical values and beliefs were collected using interviews, questionnaires and Ofsted reports. An outlier framework was used to analyse effectiveness and improvement, and to determine if either was associated with a pedagogical culture based upon the ideology of progressivism which the work of Plowden and Piaget supposedly spawned during the early 1970s. It has been argued that this ideology still continues to influence primary practice and has been largely responsible for a perceived decline in standards of literacy.

The results of this study suggest that differences in pedagogical culture between outlier groups are not nearly as wide ranging as some critics of primary practice suggest. However, although the differences may be few, they may still explain the apparent divergence in effectiveness since they appear to relate to pedagogical goals, methods, and certain leadership strategies. Differences between schools in which the rate of pupil progress improved substantially between 1994-6 and those in which it declined, appeared even less marked.

This study also explores the challenges involved in linking research into school effectiveness with school improvement, and suggests that the lack of synergy between the two, particularly in the sphere of teaching and learning, can be partly transcended through the concept of pedagogical culture which is common to both fields of enquiry. The study concludes by positing a model that uses pedagogical culture to link both the school effectiveness and school improvement paradigms.

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# An Examination of the Links between the Pedagogical Culture of Primary Schools, School Effectiveness and School Improvement.

# CHAPTER 1

## Introduction

### The research question

In the Summer of 1995, Her Majesty's Chief Inspector of Schools opened a series of primary headteacher conferences with a statement that acknowledged the limitations of recent educational reform and in particular pointed to the critical importance of a teacher's values and beliefs:

> *"I thought of calling the Annual Lecture 'The Limits of Legislation' because while the 1988 and 1992 reforms have had and will continue to have a very positive impact, it is ultimately the values, assumptions and beliefs which guide teacher's actions that matter. No law can (or should seek to) determine how a teacher teaches."* (Ofsted, 1995a, p. 7)

The aim of this research is to explore the veracity of the claim of HMCI that the values and beliefs of teachers are of central importance in determining the quality of teaching, and by implication, the quality of pupil outcomes. Using a sample of primary teaching staff in Suffolk, this research attempts to identify their values and beliefs about teaching and learning and to examine links between these values and beliefs and the effectiveness of their schools during the period 1994-6.

### The background to the research question

In November 1992 performance tables for secondary schools, based on the percentage of pupils who obtained five A-C grades at GCSE, were published for the first time in England and Wales. The nature of public accountability for secondary schools thus moved into a new and more challenging domain. The pressure of performance tables appears to have had a marked effect on many secondary schools, and although seriously flawed as measures of effectiveness (see Sammons et al. 1993, 1994, 1995a, 1997c; Hutchinson 1993; Goldstein and Thomas 1995; Gray 1995a, 1995b), there is growing evidence that performance tables have encouraged secondary schools to focus

more on raising cognitive outcomes. Sammons et al. (1995a) reported a marked change in the principal goals identified by headteachers which reflected the influence of league tables on their schools. The priority given to raising pupil achievement and improving examination results was far higher in 1994/5 than in 1989/90.

The pressure of performance tables encouraged some headteachers in secondary schools to scrutinise more closely the cognitive abilities of the intake from their feeder primary schools. In Suffolk Local Education Authority, the overall literacy level of the 1993 Year 7 intake as measured by 10+ reading scores seemed to be declining. This reflected a trend in primary schools which first became evident in 1988 when the reading test scores of Year 2 showed a marked drop on previous years. This decline at Year 2 was not arrested until 1990, when the mean 6+ reading test score stood at 95.26. Progress reversing the decline was slow, and the 6+ mean of 1986 (98.4) was not exceeded until 1995.[1]

Concern about declining reading scores in primary schools, among some secondary heads, intensified because the correlation between Suffolk Reading Test scores and overall GCSE performance was a strong one; between 1994-6 the mean correlation between 12+ reading scores and the overall best seven GCSE results was 0.7.[2] The longer term prospect of raising raw GCSE results, and thereby improving league table position, did not appear an optimistic one. Subsequent research by Sammons et al. (1995b) and Goldstein and Sammons (1997) suggest these fears were well founded; both point to the important and enduring influence of the quality of primary school experience on pupil attainment at GCSE. For some secondary schools, the consequences of declining reading scores in feeder primary schools could mean being consigned to a low position in the local performance tables for years to come. To secondary headteachers in this position, the long term impact on pupil recruitment and school income appeared ominous.

At the same time as concern over standards of literacy in primary schools began to grow among many Suffolk secondary headteachers, interest in the development of

[1] By 1997, the County 6+ mean had improved to 100.86

[2] The correlations between Suffolk Reading Tests were even stronger. During the period 1994-6. the mean correlation between 6+ and 8+ test scores was 0.84; between 8+ and 12+ it was also 0.84.

other more valid measures of pupil achievement began to increase. The publication of performance tables in November 1992 brought the debate over the validity of value added measures into the public arena, and significant contributions to the debate were made over the next two years by Fitz-Gibbon (1992), MacPherson (1992), Gray (1993,1994) and Jesson (1993). In September 1993, a Headteachers' Value Added Consultative Group was established in Suffolk to explore the potential uses to which various types of value added data could be put. Representatives on the Group reflected all phases: primary, middle and secondary. The Group was chaired by the Chief Education Officer which was a clear indication of the importance the LEA attached to the issue of value added data.

During the Summer and Autumn of 1993, Suffolk LEA developed its own value added measures of pupil progress using results of the Suffolk Reading Test which had been standardised in 1986 using a randomly selected national sample of 38,000 pupils. In 1991 NFER, on behalf of the DFE, carried out an evaluation of all reading tests used by LEAs and reported that the standardisation of the Suffolk Reading Test was exemplary. It went on to conclude that individual results could be regarded as reasonably accurate and provided a reliable indicator of pupil performance.

Since 1986 the Suffolk Reading Test has been taken by every pupil in Suffolk primary and secondary schools. It is administered at four points in a pupil's education: at 6+, 8+, 10+ and 12+. It is therefore possible to make valid comparisons between the performance of individual pupils and groups of pupils at each of these four points. The pressure of performance tables on secondary schools encouraged Suffolk LEA to use this data to help address two issues that were causing many Suffolk headteachers concern:

(i) The iniquity of using raw data to measure effectiveness.

The strong correlation between 12+ reading scores and overall GCSE performance provided a valid baseline against which to evaluate pupil achievement at GCSE. A measure of progress between two points rather than an absolute measure of attainment at one, seemed a fairer basis upon which to make comparisons.

(ii) The overall decline in mean reading scores in primary schools.

By applying a regression analysis individual pupil performance could be compared between three points in a school career: 6+ and 8+; 10+ and 12+; 12+ and 16+ (using GCSE performance). Individual pupil results were aggregated to produce a school residual which provided a measure of the overall mean progress made by pupils in that school.

In September 1994, the Suffolk Headteachers' Value Added Consultative Group decided to establish a pilot project to promote the use of value added data both as a measure of school effectiveness, and as an aid to school improvement. As project field officer, I visited 25 of the 42 primary schools[3] who volunteered to join the project to discuss individual value added data with headteachers. Reactions to the data varied and, in some cases, appeared to reflect differing school priorities. Some schools appeared to accept responsibility for their pupils' progress or lack of it. Others appeared to blame a lack of resources, poor pupil behaviour or ineffective parents. In addition, the value added data for primary schools revealed a greater variance than for secondary schools; some primary schools appeared to be significantly more effective than others in value added terms. The view began to form that this may reflect a greater diversity of perspectives. Was this phenomenon, as Ofsted (1995a) and others (Alexander 1994; 1996a and Alexander et al. 1995) have argued, due to the prevalence of certain teaching methods that reflected values rooted in a liberal ideology of primary education which had found full expression in the Plowden Report of 1967? This was the genesis of the question which this research project sought to examine: how far could the differential performance of primary schools in the Suffolk School Improvement Project be explained by different values and beliefs?

**The importance of teachers' values and beliefs**

Perhaps the most important aspects of research into school effectiveness, have been the focus on pupil outcomes, and the overriding importance of the classroom. As Mortimore (1991b) notes:

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[3] Significantly in the first year, 1994, 79% of secondary schools (30 out of 38) volunteered to take part in the Suffolk School Improvement Project; by comparison only 17% of primary schools did.

> *"the research on school effectiveness offers a salutary reminder that what matters in education is the quality of learning and teaching. This cannot be guaranteed by legislation or by policy formulation. It is a product of deliberate strategies of teachers and the purposeful commitment of pupils within the positive climate of the school."* (p. 15)

Scheerens (1992) argues in his analysis of school effectiveness research, that most of the variation between schools is due to classroom variation rather than other "school" factors. Recent research into the correlates of effectiveness relates largely to the classroom. Of the 11 factors identified by Sammons et al. (1995c), six emanate directly from the classroom (*a learning environment, concentration on teaching and learning, purposeful teaching, high expectations, positive reinforcement, monitoring progress*); the remaining five (*professional leadership, shared vision and goals, pupils' rights and responsibilities, home-school partnership and a learning organisation*) shape the cultural milieu of the school and create the climate in which an effective classroom is more likely to thrive. Brown (1994) takes the focus on the classroom further to consider teacher perceptions and argues that therein lies the route to improvement. To do this, researchers must:

> *"start from where the teachers are, the emphasis has to be an exploration of how teachers construe their own teaching, their students and what they are trying to achieve."* (p. 61)

Porter and Brophy (1988) support this view and argue that the starting point for understanding the linkage between teaching and pupil outcomes should lie in examining how teachers reach decisions about the appropriacy of particular strategies. These often complex decisions are guided by deeply held values and beliefs. Therefore, understanding school effectiveness is not simply a matter of examining teaching strategies but also identifying those principles upon which teacher decisions about pedagogical strategy are based.

Choice of teaching strategy is not an arbitrary process. Porter and Brophy (1988) argue that choice of strategy is based on the goals which teachers have for education. Many of these goals are strongly held, and Nias et al. (1989) argue that decisions about strategy are based on deeply rooted assumptions that are often very resistant to the pressure of external change. It has been argued that the externally

imposed pressure of the National Curriculum has substantially changed the decisions primary teachers make. However, Alexander et al. (1995) found that pedagogical practice in primary schools has not changed significantly with the implementation of the National Curriculum, although assessment and planning have. This is the starting point for this research. The clear and consistent differences in effectiveness that exist between the 32 primary schools in this research (as measured by the LEA's approach to value added), may reflect different classroom strategies. These in turn may well reflect values and beliefs which are the bedrock upon which pedagogical decisions about strategy are made.

Collectively, values and beliefs shape and reflect a critical dimension of schools: their culture. School improvement research has emphasised the importance of culture which Scheerens and Bosker (1997) define as:

> *" the set of shared meanings, collective norms and views on interaction and collaboration. As such, culture is considered of great importance in providing the normative glue that holds the organisation together."*
>
> (p. 17)

Inextricably linked to the research question was the desire to explore whether teachers' values and beliefs collectively created a pedagogical culture that was distinctive, and which in turn may have been related to effectiveness or improvement. Much has been made of the existence of a liberal ideology in some primary schools based on the ideas promoted by The Plowden Report of 1967 (see Kyriacou 1986; Alexander 1991,1994; Alexander et al.1992; Luxton and Last 1997) and encouraged by the research of Swiss psychologist Jean Piaget (see Gipps 1992). This ideology has been deemed by some (Ofsted 1995a; Alexander et al. 1992) to be partly responsible for the supposed decline in the standards of literacy in primary schools. This research would also seek to test the strength of this link if indeed it existed.

**This research and focal theory**

A major concern of school effectiveness and school improvement research has been the lack of synergy between the two paradigms. Attempts have been made to link them more closely (Reynolds 1989; Stoll 1992; Reynolds et al. 1993; Stoll and Fink

1994; Gray et al. 1995c; Stoll and Mortimore 1995; Creemers and Reezigt 1997) but differences in goal orientation and methodology has meant that there are few studies (Stoll and Fink 1996; MacGilchrist et al.1997b; Huber 1998) that directly link both. Those, such as Creemers and Reezigt 1997, who seek a closer relationship based on *"sustained interactivity"* (p.419), argue that the path lies in school improvement research being more ready to use pupil outcomes as a legitimate way of evaluating change.

This research project has pursued this line of enquiry by drawing on the methodology of both disciplines. Quantitative and qualitative instruments have been used to uncover possible causal links between school improvement variables, such as 'a shared vision' or 'purposeful leadership,' with measures of effectiveness based on quantitative measures of pupil outcomes. The findings suggest that variables which appeared linked with improvement are not dissimilar from those which correlate with effectiveness. It also seems clear that differences in values and beliefs between the research schools are remarkably few whether they appear to be consistently effective, ineffective, improving or declining. However, this may reflect the limitations of the research design or circumstances under which it had to be carried out. Nevertheless, this research suggests that the difficulties of linking school effectiveness and school improvement are not insurmountable, and that research which embraces both paradigms is not only feasible, it is also worthwhile because it offers a means of addressing the problem of causality that has weakened the impact of some school effectiveness research.

**Outline of the thesis**

The question explored by this research does not fit easily into a single field of enquiry; Chapters 2-5 contain reviews of the literature in the four fields of enquiry covered by this research. Charting school effectiveness over time has meant a detailed examination of some of the issues that underpin the criteria used to define effectiveness in this research. These include: locating the extent of the difference between primary schools in terms of pupil outcomes once contextual factors have been allowed for; the

stability and consistency of school effects over time, and the differential effects of schools for different groups of pupils and subjects.

The existence of three years of quantitative data also enabled the research question to be broadened beyond effectiveness over time to include the issue of change. During the period 1994-6, some schools appeared to become more effective while others declined, and this research sought to discover whether these changes could be linked to differing beliefs about teaching and learning. School improvement literature has identified a number of key process variables that relate to progress over time, and these were used as a framework against which to examine the values and beliefs that made up the pedagogical cultures in those improving or declining schools.

Effectiveness and improvement may also reflect the efficacy of certain methods of teaching and learning, therefore Chapter 4 reviews the research literature into some of the main issues surrounding pedagogy. Critics of the research methodology used in this project could argue that school effectiveness simply reflects the success of a particular strategy for teaching reading and nothing more. Chapter 5 concludes with a review of recent research into teaching reading and argues that the success of a particular strategy cannot be isolated from the overall pedagogical culture in the school.

Chapter 6 discusses the rationale behind the research design, and examines some of the methodological problems associated with using instruments such as interviews and questionnaires to unearth teacher beliefs and values. The perceptions of teachers located by the research instruments are clearly critical in explaining effectiveness or improvement, but, as Mortimore et al. (1988) found, they do not necessarily match the reality of what teachers actually do in classrooms. This issue was partly addressed by the use of inspection reports which provided an additional source of evidence of what appeared to be happening in 14 of the research schools that were inspected by Ofsted during the period covered by this research. However, doubts have been expressed (see Mortimore and Goldstein 1996) about the validity and reliability of Ofsted judgements, and this issue was examined in Chapter 6 and also later in the research findings themselves.

The issues surrounding effectiveness and improvement, reviewed in Chapters 2-5, had a direct bearing on the statistical measures and data analyses described in Chapter 7. Limitations over access to certain types of data ruled out the use of multilevel modelling techniques used by other SER researchers (for example: Goldstein et al. 1993; Sammons et al. 1993; Goldstein and Thomas 1995; Sammons et al. 1995b; Gray et al. 1995b; Sammons et al. 1997b and Goldstein and Sammons 1997). The credibility of the research hinged heavily on the integrity of the statistical framework developed to identify effective schools and those which were improving. Chapter 7 contains a detailed discussion of the rationale that underpinned the outlier frameworks developed to represent the effectiveness and improvement paradigms.

Chapters 8 and 9 discuss the results of the data analyses and demonstrates that there were differences in perspectives between the staff in the outlier groups of schools. Although not wide ranging, these differences may have been influential in terms of teaching and learning policy and practice. It also appears that beliefs and values that sustain effectiveness over time may not be exactly the same as those which generate school improvement in primary schools.

This research straddles the fields of both school effectiveness and school improvement, and Chapter 10 relates the research to other research findings in each paradigm. Reynolds (1997) has lamented the lack of interface between school effectiveness research and work on school improvement, and has spoken for many when he argued that progress at theory generation has been slow. The findings of this research suggest that pedagogical culture may be a bridge to link both fields of enquiry since it is of critical importance in sustaining effectiveness and in creating the dynamic of school improvement. This dimension is used as the central component in the development of a theory that attempts to integrate the concepts of academic effectiveness and improvement. It is argued that the critical impact of pedagogical culture on pupil outcomes is manifest in two spheres:

(i) In the creation of those conditions that facilitate effectiveness or improvement. Without these conditions it is unlikely that pupil outcomes can be enhanced. However, because they are solely concerned with

creating an environment in which teaching and learning can flourish, they do not guarantee that this will in fact happen. This very much depends on the second dimension which pedagogical culture influences.

(ii) The selection of an appropriate strategy. The evidence from this and other research suggests that the choice and effective application of appropriate strategies are the ultimate arbiters of pupil progress at school.

This research also suggests that pedagogical influences emanate from a variety of frequently competing sources. The model is completed by integrating these sources of influence. The model does not claim to be as all embracing as others (see for example, Scheerens 1992; Creemers 1994; Stringfield 1994b; Sammons et al. 1996a), rather a modest attempt to use the results of this research to elevate school effectiveness and school improvement research beyond the level of 'what works'.

Chapter 11 is a summary of the findings of the research in relation to the research question. It also discusses some of the methodological strengths and weaknesses of the research and suggests areas which might be explored in the future. The chapter concludes by assessing the contribution of this study to the generation of theory.

**Conclusion**

The drive to make schools more effective has been a consistent goal of policy makers over the past decade and has reached its apogee with the publication of the National Literacy Strategy (see DfEE 1997b and 1998). Central to this strategy is the establishment of a daily "literacy hour" in primary schools, accompanied by detailed instructions on how this time should be spent. While the intentions are laudable, it remains to be seen whether the strategy realises the aspirations of its authors. Ultimately success will depend on the commitment of primary teachers, and the central focus of this research has been to examine the links between pedagogical beliefs and pupil outcomes. It is to be hoped that those who rightly and determinedly seek to raise levels of pupil

performance in primary schools do not fall into the trap of believing that improving pupil outcomes can simply be achieved through mandating what happens in classrooms. This research suggests that the values and beliefs of headteachers and teachers about what constitutes effective teaching and learning are critical in determining the progress pupils make in primary schools. Raising standards in primary schools may be more effective if certain values and beliefs are challenged at the same time as particular strategies are promoted.

# CHAPTER 2

## Literature Review: School Effectiveness

*"All our children deserve to leave school equipped to enter a fulfilling adult life. But if children do not master the basic skills of literacy and numeracy while they are at primary school, they will be disadvantaged later."*

Blunkett (1998, p. i)

### Introduction

Central to this research is the concept of school effectiveness; it is the basis upon which all conclusions and inferences are made. The main objective of this section of the literature review is to examine some of the key issues that surround the identification of effective schools and to establish the rationale behind the criteria chosen in this research to measure effectiveness.

### Defining an effective school

Defining effectiveness in a school context is conceptually and methodologically problematic since effectiveness is not, as White (1997) points out, a value-neutral concept. Although the aims of most schools are many and diverse, researchers have tended to gauge effectiveness mainly in terms of measurable cognitive outcomes such as reading scores, test or examination results. Reynolds and Creemers (1990) have criticised the narrowness of this approach arguing that there is far more to education than simply developing basic skills. Stoll and Mortimore (1995) point out that the world beyond school demands a breadth of skills and aptitudes, few of which are ever measured by school effectiveness research. Others, such as Davies (1997), argue that the focus on cognitive outcomes ignores the fact that many schools define their own effectiveness in much broader terms; moral, affective and social attributes figure as prominently as academic outcomes in most statements of school aims and objectives. Among these non cognitive objectives Davies cites the following:

> *"citizenship, self esteem, political awareness, social responsibility, caring human beings, solidarity and co-operation, vocational preparation and life long learning."* (p. 31)

Although school effectiveness research appears preoccupied with academic outcomes, it could be argued that the cognitive and certain aspects of the non cognitive are closely entwined, and that in fact measures of academic outcomes also reflect certain social or affective outcomes. For example, poor behaviour or low self esteem are frequently linked to limited cognitive progress. Rutter et al. (1979) showed that certain behavioural and affective outcomes were related to academic achievement since he found that schools with high levels of attendance and good behaviour also had high levels of examination success. Knuver and Brandsma (1993) suggest that there is a causal link between the cognitive and the non cognitive and that certain affective outcomes such as a positive attitude towards education appear to be the result of academic achievement. They also found that at the individual pupil level this relationship grew stronger as pupils moved through primary school. Creemers and Scheerens (1994) argue that if there is a causal link between cognitive and some non cognitive outcomes then school effectiveness research is right to focus more on academic achievement.

Davies (1997) criticises SER[4] for *"a tendency to select 'the measurable"* (p. 31) and in a methodological sense the attraction of cognitive outcomes, as Knuver and Brandsma (1993) argue, is that they appear easier to quantify than some of the non cognitive. The difficulties of measuring the development of moral, aesthetic or certain social skills are considerable and very time consuming. However, despite these difficulties, Mortimore et al. (1988) developed instruments specifically to gauge certain behavioural and affective outcomes and, at first sight, their findings appear salutary for those who seek to evaluate effectiveness in primary schools solely in terms of academic progress. They found that some schools were better at promoting progress in academic areas while others were better at promoting non cognitive outcomes such as good behaviour, positive attitudes or self-concept. They concluded that school effects upon non cognitive outcomes were largely independent of those on cognitive areas. However, only three schools out of 47 recorded positive effects for cognitive outcomes

[4] SER a commonly accepted acronym for School Effectiveness Research

yet appeared ineffective at the non cognitive level. At the pupil level there were strong correlations between behaviour, attendance and attainment and some schools (14 out of 47) had positive effects on both academic progress and development in several non cognitive areas.

Whatever the relationship between cognitive and non cognitive outcomes, this research study chose to focus solely on academic outcomes by using pupil performance on reading tests as an indicator of effectiveness and thus acknowledges that its definition of school effectiveness is in some respects a narrow one. However, as the longitudinal research by Parsons and Bynner (1998) indicates, there is strong evidence that poor reading attainment during the early years of primary school has long term consequences for later life chances. Furthermore, in terms of public interest and contemporary relevance this focus is a valid one. The increasing demands of public accountability have placed academic measures of primary school effectiveness firmly at the top of the public agenda. The decision to publish annual performance tables of Key Stage 2 results in 1996 provided the public, for the first time, with a means of assessing the effectiveness of primary schools. Improving cognitive outcomes has become a key priority in most primary schools as Brooks et al. (1998) have shown. The definition of effectiveness used in this research may therefore make the results of this research of particular relevance to primary schools seeking to raise levels of literacy. In addition, the criteria used in this research project to measure effectiveness offer a more valid means of determining effectiveness. Currently primary school performance tables use raw attainment results and also a threshold model which reports only those pupils who reach Level 4 or above. This research uses a measure of progress rather than a measure of absolute attainment and, in arriving at a mean residual for each school, every pupil's progress at reading between Year 2 and Year 4 is included. It is thus a more comprehensive and more valid measure of effectiveness than those currently provided for public consumption.

Other critics of SER such as Angus (1993), Hamilton (1997) and Elliott (1996) argue that measures of effectiveness based on cognitive outcomes are, in essence, based on values that reflect a narrow instrumental view of education which ultimately supports socially coercive policies. Such views have been vigorously challenged by Sammons et

al. (1996b), Mortimore and Sammons (1997) and Sammons and Reynolds (1997a). It is not the purpose of this review to explore the respective merits of this debate except to point out that regardless of the conflicting perspectives of researchers, it is an indisputable fact that particular cognitive outcomes, such as the acquisition of basic literacy skills, remain of fundamental importance to the life chances of young people. The importance to each child of being able to read at the highest level they are capable of cannot be underestimated, as Blunkett (1997) points out:

> *"If we have horizons and visions of a comprehensive system built on the foundations of a primary sector that offers excellence to every child, that meets the standards which we set for 11 year olds, that ensures the basic skills, the tools for learning, of being able to read and write and to be numerate are there for every child - then they can flourish and become creative in their own right. The child who cannot read cannot learn; the child who cannot learn cannot flourish in a creative world of the new century."* (p.7)

The focus of this research project involves examining why children who go to certain primary schools appear consistently to make more progress in reading. It is difficult to see how this focus could be seen as taking an instrumental view of education or in some way legitimating social coercion. The ability to read is fundamentally a liberating skill and one that ultimately ensures that academic debate will continue to flourish. Hamilton (1997) has accused SER of being based on a *"progressive, social Darwinist, eugenic rationale"* (p. 125) and of underwriting a *"pathological view of public education in the late twentieth century"* (p. 125). It can be argued that the underlying rationale behind this research project is rooted in equity and social justice and thus is far removed from his claims. Ultimately, this research project aspires to unravel the links between teacher beliefs and pupil outcomes in the hope that its findings will help to increase the effectiveness of primary schools and thereby enable all children, regardless of background or school attended, to flourish.

**The search for the school effect: the relative importance of contextual factors.**

Mortimore and Whitty (1997) argue that the policy of performance tables and market forces largely ignores the impact of social disadvantage on educational achievement and propagates a culture in which:

> *"Teachers who have dared to mention the subject have been branded defeatist or patronising for even considering that social background can make a difference."* (p. 1)

However, research into school effectiveness and school improvement has demonstrated the significance of contextual factors, such as social background, in understanding effectiveness: Sammons et al. (1994) have shown that contextual factors such as gender, ethnicity, socio-economic and family background do have a profound impact on pupil progress and achievement in all phases of schooling.[5] Therefore, the school effect can only be estimated if contextual factors can be controlled for. School effectiveness researchers (Nuttall et al. 1989; Patterson and Goldstein 1991; Gray et al. 1995a; 1996; Goldstein and Sammons 1997; Goldstein 1997b) have developed methods of measurement such as multilevel modelling which isolate the impact of context and quantify the influence of the school. Mortimore (1995) described those contextual factors which influence pupil attainment as a "dowry" which pupils bring to a school. Researchers into school effectiveness have sought to disentangle the influence of this "dowry" from the impact of the school and to quantify the size of the school effect. Coleman et al. (1966) showed that school characteristics accounted for 8.9 per cent of the variance between schools in terms of pupil achievement. Rutter et al. (1979) reduced the secondary school effect on exam results to a mere 1.6 per cent. Studies during the 1980's confirmed that the school effect as measured in terms of total variance in pupil achievement was comparatively small (Gray et al. 1983,1984; Willms 1986). More recent research suggests that the school effect on pupil progress may be significantly larger and more complex. Scheerens' (1992) review of school effectiveness research in the Netherlands put the average variance between schools at between 11 and 12 per cent of the total variance, while Cuttance (1992) concluded that between 7.5 and 10 per cent of pupil variation in exam results may be due to school effects. Thomas and Mortimore's (1996) multilevel analysis of the 1993 GCSE results in 87 schools in Lancashire put the school effect at 10 per cent. Creemers (1994) and Hill and Rowe (1996) claim that the school effect can be as high as 18 per cent, although Sammons et al.'s (1994) use of multilevel modelling for Ofsted suggest that only 6 to 8 per cent of

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[5] Despite overwhelming evidence about the influence of contextual factors, the National Literacy Strategy (DfEE 1997b) has set literacy targets based on absolute attainment. By 2002 80% of 11 year olds will be expected to reach Level 4 in English, the standard expected for their age. By 2006 all 11 will be expected to have reached this standard.

the total variance in student's GCSE results was due to differences between secondary schools. Sammons (1995) suggests that the reasons for these differences may be twofold:

> *"In general, U.K. studies have produced lower estimates of the size of school effectiveness in terms of percentages of total variance attributed to the school, possibly a reflection of the use of more detailed student intake measures or the reliance on non - national samples of schools usually in disadvantaged areas (e.g. inner London) which tend to reduce the extent of variation lying between schools."* (p. 6)

The net effect may be to constrain variance between schools. The data used in this research project has been drawn from primary schools in a shire county which also serve a wide spectrum of catchment areas. Although a relatively small sample, they may nevertheless represent a more normal distribution of primary schools.

Differences in estimating the ratio between school and contextual effects may in turn reflect the changes in national education policy during the latter part of the 1980's. The introduction of the General Certificate of Secondary Education (GCSE) undoubtedly increased the number of pupils entered for public examinations (Gray et al. 1998). The introduction of Local Management of Schools (LMS) and the cultivation of a competitive ethos among secondary schools in turn made examination results more important than they had ever been. Since 1988, the published measure of school performance has been produced by comparing examination results with the number of pupils on roll. This has encouraged a more open entry policy than existed in the early 1980's. Jesson and Gray (1993) report that there was one additional GCSE entry, on average, for each three Year 11 pupils in 1992 compared to 1991. The impact of this change on the number and range of pupils sitting GCSE examinations could have magnified the extent of the school effect on achievement. The size of school effect may therefore vary historically and reflect in part the strength of external pressures such as the imposition of a competitive framework. The dramatic improvement in KS2 SAT results in Suffolk primary schools between 1995 and 1997 must in part be linked to the pressures associated with the publication of performance tables from 1996 onwards.[6]

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[6] In 1995 only 48% of pupils in Suffolk primary schools reached Level 4 in the Test component of KS2; by 1997 the figure had increased to 67%. The size of this increase is likely to mirror a similar increase in the size of the school effect.

The national context has changed markedly in England and Wales during the period of this research. The first 6+ reading tests used in this research took place in Spring 1992 and the national context at that time was very different from Spring 1996 when the last set of 8+ reading tests were taken, not least because of the increased level of public accountability placed on primary schools during this period. Clearly this may affect the degree of stability of the school effect and there would be a need for further research to disentangle the school effect from the effects of changes in national policy. However, all primary schools were subject to the same level of accountability and so this research assumes that this factor was equally present in all schools although it may well have been interpreted and responded to differently.

**The school effect: its relative importance**

The statistical size of the school effect does not, at first glance, appear to be particularly impressive. Ten per cent still appears a somewhat marginal difference and suggests that the parameters within which schools work are heavily constrained. Blakey and Heath (1992) analysed the exam results of 2000 pupils in 15 comprehensive schools and concluded:

> *"Schools, then, do appear to have some choices open to them, but the constraints of the contextual factors are quite restrictive. Some schools do a better job than others, but even the best cannot compensate for society."* (p. 121)

The findings of Willms (1986) suggest that real school improvement may lie in changing the social composition of schools by ensuring that pupils from higher SES backgrounds are more equally distributed among schools, rather than searching for internal strategies to raise achievement levels. A study by Witte and Walsh (1990) of schools in the Milwaukee metropolitan area tends to support this view. They identified two very different kinds of school, each powerfully shaped by their location and the socio-economic backgrounds of their students:

> *"In one world, students come from poor, often Black or Hispanic families; in the other the students are almost all White and predominantly middle class or better. Student achievement is grossly different on all measures."* (p. 193)

They concluded that the school effect was *"modest"* (p. 206) and that such was the influence of context that efforts to make the schools more effective would not actually lead to any significant improvements in student achievement.

Such a pessimistic view ignores the significance for an individual pupil of even a marginal improvement in school effectiveness. This is particularly important in educational systems such as the U.K. where access to post 16 opportunities and higher education is based on examination results. Equating the school effect figure with GCSE points or reading scores demonstrates that a figure of 10 per cent can be of considerable practical importance to an individual pupil. The school effects are also more significant for disadvantaged pupils who are less likely to be able to compensate for a poorer school experience than pupils from more advantaged backgrounds. It also ignores the differences in measuring the school effect in terms of the percentage of total variance rather than the percentage of unexplained variance (i.e. progress) not accounted for by prior attainment. Mortimore et al. (1988) showed that in terms of relative pupil progress the school was roughly four times more important than background factors.

The size of school effect may also depend on whether comparisons are made with a mean or between outliers. Recent studies suggest that the difference in school effect between successful schools and less effective schools can be significantly greater than any notional average may imply. Willms' (1986) comprehensive study of SES[7] and examination results in Scotland suggested that for the average pupil attending a good school rather than a poor one it could mean the difference between leaving school with three 'O' grades or none at all. This finding was supported by a Scottish study of Cuttance (1992) who found the difference between the most effective quarter of schools and the least effective quarter was of the order of two 'O' grades. Sammons et al. (1994c) analysed two data sets for Ofsted based on 1992 examination results. Having made allowance for a small number of contextual factors, they found that for one in five of the sample schools the school effect amounted to at least five or more GCSE points. The study of Jesson et al. (1992) into Nottinghamshire's 1991 GCSE results identified some substantially different outlier schools even when allowance was made for gender, parental occupation and free school meal status. Eight schools performed above that

[7] SES is a commonly used acronym for socio-economic status

predicted by the model and increased each pupil's examination score by, on average, four points per pupil. By contrast, in those schools whose examination results were significantly below prediction, pupils achieved on average four points less per pupil. Thus the difference between the successful outliers and the less successful was eight GCSE points which, for an individual pupil, could mean the difference between eight grade "D"s and eight grade "C's". Gray et al. (1995b) reported a smaller difference (8% or less) in their multilevel analysis of data sets of GCSE results from six LEAs. They found that on average the difference in pupil attainment between the more effective schools and the less effective amounted to four points or the enhancement of one grade in four subjects at GCSE. However, they acknowledge that the range of difference between the most effective schools and the least effective was much wider. Thomas and Mortimore's (1996) multilevel analysis of Lancashire schools found a much greater average difference between the most and least effective schools that amounted to 14.4 GCSE points which is the difference between seven E grades and seven C grades. The original thesis therefore appears to still hold good; the school a pupil attends affects their level of achievement and can substantially influence the range of opportunities open to them in later life. The use of outliers may be a means of locating significant differences between schools not just in terms of pupil achievement but quite possibly in teacher attitudes and beliefs. For this reason an outlier framework was used to explore differences in both effectiveness and improvement. Chapter 7 contains a detailed description of the criteria used to identify these outliers.

**The school effect and primary schools**

The degree of influence of primary schools on pupil attainment may be of a different magnitude than secondary. The impact of contextual factors may be greater in secondary schools for a number of reasons not the least the onset of adolescence. In Scotland, Bondi (1991) found significant differences between primary schools in the reading attainment of children from similar backgrounds. She reported that for a child with average background characteristics, the individual school effect could lead to variations in the final year of primary school in reading attainment from 95.4 to 111.5 (mean = 101.5). Sammons, Nuttall and Cuttance (1993) found that primary school effects for reading and mathematics in Year 5 were in the region of 18-19 per cent. By

contrast Sammons et al. (1995b) reported that the secondary school effect on overall GCSE examination score was only nine per cent. Tymms et al. (1997) suggest that the school effect may be even greater on the progress of pupils during the Reception Year and may be of the order of 40 per cent. The magnitude of the school effect at the primary level is also evident in the ability of it to transcend contextual constraints such as social class. Mortimore et al. (1988) have shown that school effectiveness in primary schools can transcend social class differences in terms of pupil progress. The progress of children from manual backgrounds, in reading and mathematics, in the most effective primary schools was greater than pupils from non manual backgrounds in the least effective schools. The research of Sammons et al. (1998) into Scottish primary and secondary schools has shown that school effects vary more at primary than secondary level. Therefore, for primary school pupils the school attended may in the long term be more important in determining achievement than it is for secondary pupils.

Sammons, Nuttall and Cuttance (1993) found at the end of Year 5 that the variance attributable to schools was between 18 and 19 per cent. This greater degree of variance at the primary level may reflect the concentrated effects of being taught by one teacher for most of the time. Viriglio et al. (1991) reported a far greater variance in teacher behaviour in elementary schools than that in junior high schools. Average time on task in elementary schools varied from 55-96 per cent whereas the average variance in junior high schools was much smaller (61%-82%). The variance in the school effect also appears to vary by subject. Strand (1997) found that the variance attributable to the school effect was greater on mathematics attainment during Key Stage 1 than on reading attainment. Sammons et al. (1998) reported a similar finding in relative progress in mathematics between P4 (8/9 yr. olds) and P6 (10/11 yr. olds) and suggested that this may reflect the greater importance of background factors on subjects such as reading than on mathematics.[8] Results for the Suffolk Schools Improvement Project from 1994 to 1996 suggests that the school effect may increase during the period from the end of Key Stage

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[8] The size of the school effect on reading attainment and the influence of background factors raises serious questions about the ability of some schools to meet the targets set out in the National Literacy Strategy (DfEE 1997b). In 1996, one primary school in Suffolk Value Added Project had 40% of pupils with special educational needs and 48% of pupils in the school eligible for free school meals. In the same year, only 22% achieved level 4 on the Key Stage 2 National Curriculum assessments in English. Given the most optimistic estimates of the school effect on attainment in English, achieving the national literacy target of 80% by 2002 appears an unrealistic challenge for this particular school.

1 to the first two years of Key Stage 2: the difference in the average rate of progress in reading attainment between the ages of six and eight, between the most successful outlier and the least successful outlier, was nearly 10 points. The school effect may also be greater at Key Stage 2 than Key Stage 1 although more research is needed to substantiate this difference.

The significance of the primary school effect can also be seen in the longer term consequences on pupil attainment in the secondary phase. Entwhistle and Hayduk (1988) have also shown that the quality of the first three years of school has an enduring importance. They discovered that the influences of parents and teachers in Grades 1-3 were linked to children's performance in reading and mathematics four to nine years later. Sammons et al. (1995b) have shown that there is a small but significant continuing effect of primary schools on GCSE attainment. Estimates of unexplained variance in total GCSE scores attributable to primary schools were in the region of 4.2 - 5.6 per cent. Goldstein and Sammons' (1997) reanalysis of the data, using more sophisticated models, confirmed this finding. Parsons and Bynner (1998) studied the influences on basic skills from birth to 37 and drew attention to the critical and enduring importance of primary school experience at age 7+. Thus, in both the long and short term, the importance of the quality of primary education received cannot be underestimated for an individual child. Examining some of the reasons for differences in the performance of primary schools is therefore a particularly important focus for a research project.

**The stability of the school effect**

Rutter et al. (1979) argued that effective schools are consistently effective in terms of pupil outcomes. Gray et al. (1993) surveyed British studies into the stability of secondary school effects and reached a similar conclusion. Scheerens (1992) concluded that effectiveness appears to be a fairly permanent school characteristic. However, Nuttall et al. (1989) demonstrated that school performance can vary from year to year although the year on year effect was significant but small. The LSES study[9] (Teddlie 1990) showed that half the schools remained stable in terms of their effectiveness or

[9] LSES: Louisiana School Effectiveness Study. A ten year longitudinal study conducted into school effects in elementary schools. See Teddlie and Stringfield (1993).

ineffectiveness but the remainder were getting better or getting worse. Slater and Teddlie (1992) suggested in their typology of school effectiveness and leadership that schools were rarely static but were usually moving away from or towards effectiveness. However, Gray et al. (1995a) reported that only between one fifth and a quarter of the 30 English secondary schools in their study were improving or deteriorating in terms of effectiveness. Thomas et al. (1997), in their study of 69 secondary schools, found that only three schools were significantly effective across all subjects between 1990 and 1992 and only three could be classified as ineffective over the same period.

For the purposes of this research, school effectiveness was deemed to be a relatively stable commodity and one which had to be sustained for more than a year. Gray et al. (1995c) argue that a school's effectiveness can only be truly evaluated over a period of at least three or more years and consequently reading test data at 6+ and 8+ was collected for each school for the period 1994-6. The relative stability of the school effect in a number of schools over the three year period helped that part of this research which focused on school effectiveness. However, the relatively small number of schools likely to be improving or declining did have a significant impact on that aspect of the research which examined the links between school improvement and values and beliefs. This exemplifies one of the key methodological problems of researching into school improvement using outliers as a basis for examining differences between schools. The empirical base, particularly for improving schools, is likely to consist of only a few schools which might weaken the wider relevance of any conclusions.

**The school effect: differential effectiveness by subject**

Effectiveness may not be uniform across a school. Fitz-Gibbon (1992) found, in her study of A level results, that school effectiveness varied markedly from year to year. She also reported considerable instability within secondary schools with subjects varying in their effectiveness from year to year. Mathematics appeared to be more sensitive to school effects than English. Jesson and Gray (1993) argue that the relative "hardness" of a subject must be taken into account before such an evaluation can take place. Even when such allowances were made, they still found significant differences between the relative performance of departments in the same school. Goldstein and Thomas (1995);

Sammons et al. (1995a, 1996a) and Thomas et al. (1997) all report significant internal variations in academic departments within the same school and that departmental effectiveness appeared to vary from year to year. Sammons et al. (1995a) comment:

> *"in our view effectiveness is best seen as a feature which is outcome and time specific, because the results of our analyses demonstrate that some schools are effective in promoting student performance in one subject matter domain, but not in others, and some schools have significantly positive or negative effects in one year, but not in others."* (p. 46)

Thomas and Mortimore (1996) found an overall correlation of only 0.46 between the value added scores for English and Mathematics which adds further weight to the notion of internal variations in effectiveness within secondary schools.

In primary schools an equal lack of consistency across subjects has been reported. Mortimore et al. (1988) concluded that some of the junior schools in their study appeared better at promoting progress in reading whilst others were better at developing mathematical understanding. Thomas and Nuttall (1993) reported that within some primary schools there were significant differences in effectiveness according to subject. This finding was supported by Sammons (1995) who quantified the differential impact of the school effect and reported that around 14 per cent of the unexplained variance in Year 5 mathematics attainment was attributable to schools, whereas the school effect was only 9.8 per cent for reading. Scheerens (1992) explains the differential impact of the school effect thus:

> *"...schools will make more of a difference when testing skills primarily learnt at school, as compared to testing skills that, to some extent, can also be learnt at home. The differences between schools are thus always greater for subjects like Maths than for a subject like tuition in one's own language."* (p. 70)

Hill and Rowe (1996) have highlighted the significance of the classroom effect in accounting for much of the school effect. In their study of Australian elementary schools, they reported that the variance attributed to the school effect reduced to between five to eight per cent when the classroom effect was taken into account. They also found that the variance between elementary classes was very large and ranged from 36-44 per cent for English and 47-56 per cent for Mathematics. The reported classroom

effect may in reality be the teacher effect. This explanation is supported by Willms and Raudenbush (1989) who argue that the instability of the primary school effect could be partly explained by teacher turnover which can be particularly important in primary schools, where the influence of one teacher on a class is so much greater than in secondary schools. Similarly, Ofsted (1996) in its study into the teaching of reading in 45 Inner London primary schools, reported wide variations in teacher effectiveness in the same school:

> *"Unevenness in the quality and in the amount of teaching of reading was a striking feature in some schools where good work in one class stood in sharp contrast to poor work in another."* (p. 4)

Although Mortimore and Goldstein (1996) have expressed serious concerns about the credibility of the evidence base used in the Ofsted study, the issue of teacher effectiveness must nevertheless be seen as a potentially critical factor in explaining differential subject performance, particularly in primary schools. The starting point for this research is teacher effectiveness, and it seeks to examine whether teacher effectiveness is linked to a particular set of values and beliefs about teaching and learning.

**Differential effectiveness by pupil**

(i) <u>The impact of SES[10]</u>

It is also questionable whether the school effect is equally felt by all pupils. Bondi (1991) found that the influence of socio-economic background on reading attainment at ages 7 to 8 was significant and that the adverse effects of SES increased with age. Sammons et al. (1998) also found that SES affected the rate at which pupils progress, and Strand (1997) reported that pupils on free school meals not only started school with lower attainment levels they fell even further behind their peers during Key Stage 1. Mortimore et al. (1988) also found that low SES was a disadvantage for individual pupils but nevertheless, the reanalysis of the Junior School Project data by Sammons et al. (1993) found that effective primary schools were generally effective for

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[10] SES, an acronym for socio-economic status

all pupils irrespective of social class background. In this research prior attainment (performance on the Suffolk Reading Test at 6+) was initially used as the baseline for measuring progress and it was anticipated that this would account for contextual differences between schools. In theory, a prior attainment model is largely independent of contextual factors since progress between two points is being measured and the impact of social advantage or disadvantage is likely to have a similar impact at both points. Gray (1995b) supports this view:

> *"It seems improbable that it* [a single measure of pupils' prior attainment] *would take account of all the differences but likely that it takes account of most of them."* (pp. 99-100)

However, subsequent analysis of the mean residual data for each school showed that social disadvantage did appear to affect the rate of progress made by pupils, and so the mean residuals were adjusted on the basis of the percentage of pupils in the school eligible for free school meals (see Chapter 7 pp. 154-5).

(ii) Pupil composition

Willms (1992) pointed out that the composition of a secondary school's intake can influence pupil outcomes over and above the effects of individual ability and social class. Willms (1986) found that pupils of average ability performed better in schools where the majority of pupils were of a higher ability, than pupils of average ability did in schools that contained a large proportion of low ability pupils. Sammons et al. (1998) reported a similar phenomenon: in schools where there were high proportions of FSM[11] results for all pupils were lower. The ability profile of pupils may therefore be a factor in effectiveness that applies across all schools. By contrast, differential effectiveness between schools suggests that some schools may be more effective for certain kinds of pupils. Nuttall et al. (1989) found a greater variability in the performance of more able pupils than among the least able. Gray et al. (1995b) felt that Nuttall et al. (1989) may have overstated the case. Their own research into datasets from six LEAs, using multilevel modelling, led them to conclude that most secondary schools in their study seem to have a similar effect on most of their pupils. However, Thomas and Mortimore

[11] FSM, an acronym for free school meals. Eligibility for free school meals is often regarded as a good proxy indicator of social and economic disadvantage.

(1996) found that a significant minority of secondary schools were more effective with high ability pupils than with the least able. In this research project, residual data was analysed to determine whether the ability composition of a primary school correlated with effectiveness; no correlation was found and so, unlike SES, the residuals were not adjusted to allow for this factor.

(iii) Gender

The 1994 data from the Suffolk Schools Improvement Project suggests that schools vary significantly in their relative impact on boys and girls. On average boys appeared to underachieve, relative to their prior attainment as measured by performance on the 12+ Suffolk Reading Test, in 24 of the 30 of secondary schools. In a sample of 3798 secondary pupils, girls on average obtained 4.3 more GCSE points than boys, yet in some schools there was no difference. A similar disparity was revealed in the 42 primary schools which joined the 1994 Project, although a combination of ability and gender seem to determine rates of progress between 6 and 8. Low ability boys made less progress than low ability girls yet there was no significant difference in the rate of progress between more able boys and more able girls. However, in only two out of 12 middle schools was gender a significant variable in pupil progress. These results confirm the findings of Bondi (1991). In one of the schools in her study the "average" girl outperformed the "average" boy by 4.4 points in reading attainment. At the other extreme, where the situation was reversed, the "average" boy only outperformed the "average" girl by 0.4 points. Mortimore et al. (1988) could find no significant difference between junior schools in their effectiveness towards boys or girls in terms of progress in reading. Strand (1997) found that girls made more progress than boys during Key Stage 1 and so the gender gap, which was evident at the start of school, increased. In order to identify the school effect in this research project, individual school datasets were examined to see whether gender correlated with progress at reading between 6+ and 8+. No correlation was found and so gender did not appear to be a factor which influenced progress in the primary schools in this study.

As with much research into school effectiveness, it is tempting to see some pupils as innocent victims of their own contexts be they school or SES. Yet as Mortimore (1995) points out:

> *"Some disadvantaged students will, of course, perform well in spite of - or even because of - their disadvantage for, as we know from many individual cases, adversity can promote motivation."* (p. 7)

Thus care should be taken to avoid deterministic conclusions about the impact of personal background or social structures. What may be true in general for a group may not hold for a particular individual.

**A summary of the implications of SER for this research**

From this literature review, seven implications were drawn out for this research:

1. An effective school was identified by academic outcomes: the results of reading tests taken in Year 2 and Year 4.

2. In order to identify the school effect, measures of progress rather than absolute attainment were used by aggregating the pupil difference in reading scores between Year 2 and Year 4. An ordinary least squares regression analysis was applied to the datasets to establish individual school residuals.

3. The use of prior attainment at Year 2 as a baseline, helped to control for most contextual factors but further tests had to be applied to the data to assess the impact on rates of progress of three variables: SES; pupil ability composition; gender.

4. In order to determine the stability of the school effect, data were collected over a three year period.

5. The national context changed during the period when the reading tests were taken and the increased pressure of public accountability may explain some of the differences between schools.

6. The school effect is significant in primary schools and the impact of the school effect on pupil attainment at the end of primary education, may be greater on attainment in basic skills than the influence of secondary schools on overall GCSE scores. These differences may be even greater when outliers are compared.

7. Inconsistency in effectiveness by subject is an issue in primary schools just as much as it is in secondary schools. A primary school used in this study may be consistently effective at promoting pupil progress at reading but it may well be equally ineffective at promoting progress at mathematics. This in turn may reflect the teacher effect rather than the school effect.

**The role of theory**

(i) Identifying correlates of effectiveness

Efforts have been made over a number of years since the seminal work of Carroll (1963), to create theory out of an increasingly diverse and rapidly growing body of knowledge that can inform future research and provide a broader and deeper framework for understanding school effectiveness. Rutter et al. (1979) identified six characteristics of an effective secondary school; Edmonds (1979) postulated a five factor model of effectiveness which has been refined and developed by other researchers such as Levine and Lezotte (1990). Mortimore et al. (1988) produced a framework of 12 key factors that contributed to effective junior schools. Sammons et al. (1995c) identified 11 factors in their review of the correlates which consistently appear in most studies of school effectiveness.

Barber (1996) argues that the strength of SER lies in its resonance with common sense and its practical appeal to teachers and politicians for whom many of the characteristics of effectiveness are a template which they can use to improve schools. However, Reynolds (1989) argues that the focus on identifying the main correlates of effective schools has limited the uses to which school effectiveness research can be put:

> *"school effectiveness research has had much more to say about what makes a 'good' school than about how to make a school 'good'."*
> (p. 167)

A template of effectiveness may be a useful ideal to aim at but may remain a distant dream unless insights can be offered into the acquisition of these characteristics and their relative importance. Hopkins et al. (1994) point to the lack of distinction between organisational and process factors, and argue that the interrelationships between factors and their relative importance have been far from clear. Nevertheless, researchers such as MacGilchrist et al. (1997b) have sought to establish a hierarchy among the factors identified by others. They argue that there are three core characteristics among the 11 characteristics of Sammons et al. (1995c) which are more important than the others. Without the three core characteristics of: *"high quality leadership and management; a concentration on teaching and pupil learning; a learning organisation"* (pp. 6-7), the remaining characteristics would not be significant.[12] The validity of the claim for core characteristics has been endorsed by Schagen and Weston (1998) whose analysis of the relationship between the Ofsted database and GCSE results showed that the most significant correlates were: 'a learning environment', 'high expectations' and 'concentration on teaching'. Thus a tentative step has been taken to identify hierarchical links between factors and a fruitful course charted for those in pursuit of theories of SER. Establishing conditional links is the first stage in unravelling the complex ways in which factors combine or interact and this principle underpinned the attempt of this research study to contribute to the generation of theory. The results were used to posit conditional links between certain dimensions of teacher beliefs and values, classroom behaviour and pupil outcomes.

(ii) <u>SER frameworks</u>

It has also been argued that a further weakness of the "list of correlates" approach to theory generation often lies in the failure to acknowledge the influence of context. The actual way in which the correlates of effectiveness are generated may vary and reflect the differing contexts in which schools operate. For example, Mortimore (1992) argues that the pressures created by the selective nature of the public

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[12] See Figure 1.1. p. 7 of MacGilchrist et al (1997b)

examination system in the U.K., accentuate the constraints which secondary schools in disadvantaged areas operate under, by increasing the proportion of alienated pupils in these schools. Teddlie and Stringfield (1993) urge caution for those who seek universal nostrums and argue: *"a simple listing of generic school effectiveness characteristics is not sufficient"* (p. 41). The findings of their LSES study confirm the need for a context specific approach to improvement. For example, they suggest:

> *"In most cases, principals in low-SES schools need to exercise more input into establishing school goals and more direct control over classroom instruction. Conversely, principals in middle-SES schools need to consider teacher norms for autonomy in the classroom and for shared decision making at the school level."* (p. 41)

Therefore, schools are complex, unique institutions each subject to certain contextual pressures both inside and outside the school. What works in one school might not work in another and correlates of effectiveness need to reflect this factor.

Recently attempts have been made in school effectiveness research (Scheerens 1992; Creemers and Scheerens 1994; Stringfield 1994 a and b; Creemers and Reezigt 1997; Sammons et al 1996a) to link correlates of effectiveness with contextual factors by developing broader, overarching frameworks and locating key factors within certain critical levels (i.e. context, school, classroom). At the same time Creemers (1994) and Stringfield (1994b) have developed SER models which are built around a series of hierarchically nested levels that interact upon one another. Sammons et al. (1997c) have developed a multilevel model of seven levels that contain at particular points all the various correlates of secondary academic effectiveness. This model is thus a synthesis of both the hierarchical levels approach and the key correlates of effectiveness. Although the model relates to secondary schools, Sammons et al. (1997c) argue that it may also be of relevance to some primary schools. In this phase the influence of the classroom level is likely to be greater especially in studies of effectiveness over only one or two school years. It is this synthesis of levels and key correlates that will be used as a framework within which to locate some of the findings of this research project.

(iii) The issue of linkage

Not surprisingly, Sammons et al. (1996a) have argued that there are, as yet, few SER theories that receive wide ranging support:

> *"We do not think that the current 'state of the art' of school effectiveness research as yet allows more than the elementary outlines of a comprehensive educational effectiveness theory to be sketched."* (p. 3)

However, progress towards the development of theory has been substantial. The challenges now facing SER appear to be two fold:

(i) To examine how the levels within various configurations actually interact and so identify the direction of the flow of influence;

(ii) To examine how combinations of factors at each level interact one with another and on other levels.

This research project has sought to meet these twin challenges by exploring how combinations of variables at the classroom level may interact between one another and on pupil outcomes. It also endeavours to build a model which shows how teacher attitudes and behaviour are shaped by factors that operate within other levels.

**Linking school effectiveness and school improvement**

The gulf between these two research paradigms has been explored by Reynolds, Hopkins and Stoll (1993); Stoll (1996); Creemers and Reezigt (1997); Gray et al. (1998); Huber (1998) and Teddlie and Reynolds (1999) who describe fundamental differences in origins, focus and methodology. At the basic level the differences seem stark: the research design of school effectiveness involves the quantitative measurement of cognitive outcomes; school improvement is more concerned with the qualitative measurement of the process of change. There have been attempts to link both paradigms and Stoll (1996) and Creemers and Reezigt (1997) have identified complementary features which may act as a starting point towards establishing what Reynolds, Hopkins and Stoll (1993) describe as a synergy. Progress may be slow: Gray

et al. (1995a) claim that school effectiveness research has been dominated by concepts that may actually inhibit understanding of the subtleties of improvement. They argue that school effectiveness researchers in their search for correlates of effectiveness have yet to provide a conceptual framework capable of dealing with the nuances of school improvement. One of the objectives of my research, with its central focus on teacher beliefs and values, is to use the findings to make a contribution to the development of a theory that is sensitive to both paradigms.

One of the fundamental barriers to linking both paradigms lies in the correlative nature of most SER findings. The assumption behind lists of characteristics, despite the relative consistency of findings, is that they are somehow causal. In fact they may well be symptomatic of effectiveness rather than being responsible for it in the first place. Gray et al. (1995c) question whether the five factors identified by Edmonds (1979) are causal:

> *"Had the more effective schools become more effective by working on these particular factors or had they already possessed these particular correlates of school effectiveness over lengthy periods of time."* (pp. 221-2)

While in some respects this may be true, the contribution of school effectiveness research to school improvement has been far greater than some detractors suggest. Without some consideration of the correlates of effectiveness, it seems difficult to imagine how any school could embark on a process of self evaluation or any improvement strategies. Murphy (1992) has highlighted the importance of SER frameworks to the process of improvement:

> *"educational reform via the effective schools model has established a framework that is quickly becoming a necessary component of any school improvement efforts especially attempts to improve the education of those students who have been least well served by schooling in the past. In other words, the effective schools movement has contributed essential principles to the larger school improvement literature."* (p. 91)

Gray (1995a) likewise argues that school effectiveness research has actually helped many schools improve:

> *"as a rule schools which do the kinds of things the research suggests make a difference: they tend to get better results (however these are measured or assessed). The problem is that these are tendencies and not certainties. In betting terms the research would be right around 7 out of 10 times, especially if it could be supported by professional assessments."* (p. 21)

If SER is clearly an aid to school improvement then establishing closer links may be of benefit to both fields of enquiry. The challenge facing those seeking a synthesis is to identify a sphere which contains factors common to both paradigms. Reynolds, Hopkins and Stoll (1993) criticise school effectiveness studies for their lack of emphasis on process factors such as attitudes, values, relationships and climate and argue that they are critical to school improvement. Those factors, which Reynolds, Hopkins and Stoll (1993) describe as school processes, together form major elements of a school's culture (see Chapter 3 pp. 58-65). This research suggests that school culture may be the bridge to link the two paradigms. The importance of school culture for pedagogical practice has been highlighted by the comprehensive survey of Fuller and Clarke (1994) into school effects in Third World countries. They pointed to the significant impact which local cultural norms have on determining the success of certain types of pedagogical practice that appear to be ineffective in Western societies:

> *"In Swaziland, seat work - the dread of teacher effectiveness experts in the West- was positively associated with achievement as well. In the Philippines, achievement was lower in classrooms with teachers who reported more active and participatory forms of pedagogy."* (p. 139)

Creemers and Reezigt (1997) argue that school effectiveness research should seek to define the key elements of school culture and examine how these elements affect pupil outcomes. Culture may therefore be the interface between effectiveness and improvement but culture is not an independent phenomenon. It is to be found in the thought processes of teachers and lies in the critical area of the classroom.

The central challenge for this research was to develop a model which embraced both school effectiveness and school improvement. Pedagogical culture is perceived to be the link between the two paradigms. The clear and consistent differences in effectiveness which exist between the 32 primary schools in this research, which are

outlined in Chapter 7, may reflect different classroom strategies. These in turn may reflect values and beliefs which are the source of most pedagogical decisions. This research attempts to explore the values and beliefs about teaching and learning which guide those decisions and examine possible linkages with elements of school culture. Aspects of pedagogical culture may contribute both to sustained school effectiveness and to school improvement

# CHAPTER 3

## Literature Review: School Improvement

*"A good school does not emerge like a pre-packaged dinner stuck for 15 seconds in a radar range; it develops from the slow simmering of carefully blended ingredients."* Sizer (1985, p. 22)

The purpose of this section of the literature review is to examine some of the key process variables identified by school improvement research which may account for the different rates of progress made by the primary schools in this study

### A definition of school improvement

From their work on the International School Improvement Project, van Velzen et al. (1985) produced a widely accepted definition of school improvement:

> *"a systematic, sustained effort aimed at change in learning conditions and other related internal conditions in one or more schools, with the ultimate aim of accomplishing educational goals more effectively."* (p. 48)

This description points to the central importance of internal conditions in the school improvement process. However, the all embracing nature of this definition carries with it certain weaknesses for the purpose of this research project. van Velzen et al. focus on the concept of change which does not necessarily equate with progress. Moreover, the ultimate beneficiaries of any school improvement measure, the pupils, are not mentioned. This shortcoming is rectified by Hopkins et al. (1994) who concisely define school improvement in terms of raising student levels of achievement and enhancing the capacity of a school to manage change. Stoll and Fink (1996) develop this definition in more detail, and describe school improvement in terms of enhancing pupil outcomes through a series of interrelated processes. According to Stoll and Fink (1996), an improving school is characterised by the following:

- *"focuses on teaching and learning;*
- *builds the capacity to take charge of change regardless of its source;*
- *defines its own direction;*

- *assesses its current culture and works to develop positive cultural norms;*
- *has strategies to achieve its goals;*
- *addresses the internal conditions that enhance change;*
- *maintains momentum during periods of turbulence and*
- *monitors and evaluates its process, progress, achievement and development."*

(p. 47)

Both definitions of school improvement take as their starting point enhanced levels of pupil achievement. In this research school improvement is defined as improved rates of progress over time and is measured against pupil performance on reading tests taken at 6+ and 8+ over a three year period. However, Stoll and Fink (1996) and Myers (1996) provide a salutary reminder that school improvement should not just focus on narrow quantifiable outcomes such as test results, but should consider the quality of the experience offered by a school. Myers (1996) argues:

> *"It is important to remember that a student could achieve excellent examination results - even using a value added measure - but could have an appalling experience of schooling, affecting their self esteem and confidence."* (p. 12)

Testing this hypothesis was beyond the compass of this research but it is questionable whether low pupil self esteem correlates with academic success as has been argued earlier in Chapter 2 (see pp. 31-2). Indeed, schools that actively promote pupil self esteem may well be more effective in terms of academic progress. For example, Mortimore et al. (1988) found that schools that had a positive effect on pupil self-concept also had a positive effect on mathematics progress.

**The importance of culture in school improvement**

Both school effectiveness and school improvement research stress the importance of culture (for example, Chrispeels 1992; Anderson et al. 1992; Louis et al.1994; Sammons et al.1995c; Sammons et al.1996a; Stoll and Fink 1996; MacGilchrist et al.1997b; Robertson and Sammons 1997). Some of the process factors outlined in the definition of Stoll and Fink (1996) also reflect key elements of school culture. However, defining school culture can be problematic. School effectiveness research has

viewed culture as the reflection of a combination of various observable surface features such as a "press for achievement," "teacher collegiality" or "a climate conducive to learning" which seem to characterise successful schools (Mortimore 1993). However, the concept of culture in schools is not simply a collection of surface attributes but a reflection of a deeper set of basic assumptions and beliefs. Often these beliefs operate at a subconscious level but collectively they represent a set of shared meanings about the primary purposes of the school and how these are best achieved. These beliefs and the values they generate, shape the observable culture of the school and are of fundamental importance to the school improvement process.

The substance of a school's culture influences its capacity to be effective. The collective norms and shared meanings which reside in the attitudes, values and beliefs of teachers, largely dictate a school's ability to improve or stagnate. School improvement may involve changing certain collective norms but, as Fullan (1991) points out, the all pervasive nature of school culture can make it a powerful constraint on change. Those seeking to improve schools ignore this concept at their peril:

> *"Cultural change requires strong, persistent efforts because much of current practice is embedded in structures and routines and internalised in individuals, including teachers."* (p. 143)

The ability of school culture to resist change was also demonstrated by Mc Laughlin (1990), who reported that some of the reform projects initiated by the federal government in the U.S.A. in the late 1960s and early 1970s failed because they ignored local beliefs and traditions. The latter exerted a powerful influence on the ability and the will of a school to embrace change. Similarly Gray et al. (1998) reported that less effective schools contained attitudes which inhibited change by influencing how staff viewed opportunities for future development.

How school culture actually promotes improvement is complex; school culture may be a cause or indeed an effect of school improvement. Hopkins et al. (1994) argue "*culture can at one and the same time be both a leading and a following variable*" (p. 86). Therefore, the relationship between culture and improvement appears to be symbiotic. Improving schools may generate their own internal dynamic which becomes

self sustaining as progress becomes manifest. The culture that initially facilitated the change thus becomes further refined and strengthened. Identifying those elements of a school's culture that spark this dynamic and start this symbiosis is one of the main foci of this research. The next section of this review examines some of those individual elements of school culture which research suggests are significant factors in school improvement.

**Key elements of school culture**

Rosenholtz (1989) identified two distinct cultures in schools which she classified as "moving" and "stuck". Each culture contained distinct features. The "moving" or "learning enriched" schools contained a culture based on:

- shared goals
- an agreement on the definition of teaching
- a commitment to collaboration
- continuous improvement
- a belief that everything was possible.

Stoll and Fink (1996) built on earlier school improvement research to create five "ideal types" of school culture that have a differential influence on school effectiveness and the capacity of schools to improve. Each "ideal type" is drawn from key elements of school culture that reflect underlying norms which they perceive as critical to the effectiveness/improvement paradigm. Thus *'moving schools'* contain teachers who work together to respond to change, who have a clear vision of where they are going and the means to get there. *'Sinking schools,'* in contrast, are not prepared or able to change. This typology is also helpful because it locates culture in specific contexts, and shows that context can be a powerful influence on the nature of culture. *'Cruising schools'* which are marking time are likely to be found in high SES areas whilst *'sinking schools'* are situated in low SES areas.

The factors described by Rosenholtz (1989) and Stoll and Fink (1996) can be divided into two kinds: those which appear to create the conditions for improvement or

effectiveness to happen and those which directly impact on pupil outcomes. It is tempting, because of the indirect nature of their influence, to view those factors which create the preconditions for improvement to be of less importance. However, some researchers (for example, Louis et al. 1994; Hopkins et al. 1996) argue that they need to be in place before change can take place and should be regarded as fundamental to the school improvement process. This next section examines some of the preconditions which have been found to be essential prerequisites for school improvement

**Preconditions for school improvement**

(i) A culture of collegiality built around a shared vision

Much school improvement research has emphasised the need for consensual values and beliefs that emanate from and, at the same time, promote a culture of collaboration and sense of professional community (Rosenholtz 1989; Stringfield and Teddlie 1989; Mc Laughlin 1990; Louis and Miles 1991; Hargreaves 1992; Stoll and Fink 1994; Louis et al. 1994; Sammons et al. 1995c; Barber 1996; Hopkins et al. 1996). Stoll and Fink (1994) state that one of the fundamental conditions for the success of the development planning process in Halton schools lay in the development of shared values which helped to establish a climate for change. Maintaining a collaborative culture throughout the planning process helped to ensure that any changes would be long lasting. Hopkins et al. (1996) found that their IQEA school improvement project worked best when due attention was paid to those internal conditions that facilitate change, and they identified collaborative planning as an important internal condition for school improvement.

This congruence of beliefs and the sense of collegiality which it generates, is also important in helping to resolve problems that inevitably occur when change is being managed. Louis and Miles (1991) elaborate:

> *"consensus about improvement goals and strategies also makes it more likely that the school staff will be able to reach a quick informal agreement about how to deal with a potential road block.....*

> *The greater the consensus about the improvement program, the more likely it is that people will feel confident in making active coping decisions, rather than simply doing nothing."* (pp. 92-3)

The study of Louisiana schools by Stringfield and Teddlie (1989) used an outlier approach and compared the very successful John F. Kennedy Elementary with the failing Calvin Coolidge Elementary which was but a short distance away. Both schools served similar catchment areas yet they were very different in terms of pupil outcomes. A distinguishing feature of John F. Kennedy Elementary was the strong faculty cohesiveness that was singularly absent from Calvin Coolidge. How such a sense of collegiality was created is not clear but it appears that external change can sometimes create a greater degree of collaboration. Webb et al. (1996) argue that the implementation of the National Curriculum has helped to increase the level of co-operation in primary schools and has broken down the culture of individualism that used to prevail. This trend towards greater collegiality has been strengthened by the system of Ofsted inspections, and may be further strengthened by the demands of implementing the National Literacy Strategy. However, Reynolds (1991) and Harris and Russ (1995) have pointed out that a strong sense of professional community does not guarantee a school will be effective. Of greater significance, is the content of the vision that binds the consensus as Lee and Smith (1996) point out:

> *"Although shared norms and values are a necessary component of a strong school culture, a positive school professional community requires commitment in a particular direction."* (p. 109)

Indeed, *"a strong school culture"* could actually constrain any prospects of improvement, particularly when it is founded on a culture of low expectations or a belief that school can do little to help pupils from debilitating backgrounds. Louis and Miles (1992) argue that the reasons for the failure of the improvement programme at Chester Central High, lay partly in the fact that the dominant culture of the school was one of blaming others for the programme's failure. Reynolds (1991) found that staff culture can at times be non-rational and capable of ignoring overwhelming evidence that certain kinds of change are required.

The direction of a school culture is therefore as important as the strength of that culture if it is to have any positive impact on pupil outcomes. A consensual culture is more likely to lead to greater effectiveness if its prime focus is on that area which is likely to lead to the most significant improvement in pupil performance, the classroom. MacGilchrist et al. (1997) found that even when primary school teachers were fully involved in the formulation of a school development plan, this did not guarantee this would have any direct impact on pupil learning. They found that the focus of some school development plans was on matters of indirect importance, such as improving the efficiency of the school or promoting the professional development of teachers, rather than specific pedagogical issues which would directly impact on pupil learning. Louis and Miles (1992) reported that effective schools programmes in a minority of American high schools were unlikely to succeed because they were focused on peripheral issues, such as improved working conditions, testing procedures or goals. Many did not appear to be attacking the basic elements of the teaching and learning process. Similarly, Stoll and Fink (1994) reported that early attempts in Canadian schools to identify "growth" targets tended to concentrate on issues which were peripheral to teaching and learning such as enhancing environmental or organisational conditions. However, Stoll and Fink (1996) argue that some schools need to focus on peripheral issues in order to get the internal conditions right before they can focus on teaching and learning issues. Moos (1996) reported that the 1994 Act of the Folkeskole[13] was of similar importance to the improvement process in Danish primary schools. The initial phase led to a deeper understanding among Danish teachers of their own values. He argues that this step was very much a prerequisite for raising the quality of education. The focus on values prompted many schools to re-appraise communication structures between management and teachers, and to examine the issue of staff development. Getting these environmental conditions right, enabled some schools to move on to experiment with alternative ways of teaching pupils.

Among the most significant preconditions for school improvement is the establishment and maintenance of a safe and orderly climate in which effective learning

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[13] Moos (1996) reported that the 1994 Act of the Folkeskole (which applied to primary and lower secondary schools) *"stressed the need for cross disciplinary teaching, for teacher co-operation, placing an obligation on the headteacher to monitor teaching and engage in whole-school planning and development."* (p. 220)

can take place. Sammons et al. (1996a) and Gray et al. (1998) emphasised the significance of a behaviour policy which helped to create an orderly environment that was an essential prerequisite for academic effectiveness. This policy, and how it was applied, in turn reflected certain cultural norms. Schagen and Weston (1998) in their analysis of Ofsted's school inspection data found that ethos[14] and behaviour were among the main school-level factors associated with higher lesson observation grades. Reynolds (1998) points to the importance of "time on task" as a key factor in pupil learning. Clearly this factor is heavily influenced by the classroom management skills of the teacher and their ability to minimise disruption. Hargreaves, D. (1995) has argued that most schools struggle to reconcile the need for social control with the need for social cohesion, both of which reflect the tension between the instrumental and expressive goals of education. Effectively resolving this tension may be an important precondition for school improvement.

(ii) <u>A culture which accepts responsibility for pupil outcomes</u>

Louis et al. (1994) found that the existence of a strong professional community among staff also appeared to foster a stronger sense of responsibility for student learning. The link between teachers accepting greater responsibility for student learning and higher levels of student achievement has been well established (Clark and Peterson 1986; Porter and Brophy 1988; Lee et al. 1991; Lee and Smith 1996). Reynolds (1996a), in his study of ineffective schools, found that when confronted by the unequivocal shortcomings of their school, teachers in these schools tended to blame pupils and their parents rather than examine their own practice. Louis and Miles (1992) claim that the crucial challenge facing principals who are seeking to improve their urban high schools, is not simply to develop a shared vision among the teaching staff but to develop a sense of collegial responsibility and accountability for delivering the vision.

Chrispeels (1992) identified a further belief that appeared essential for developing an acceptance of individual and collective responsibility for pupil

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[14] Robertson and Sammons (1997, p. 40) point out that ethos and school culture are sometimes presented as being the same thing. They argue that ethos is more the public manifestation of underlying values and beliefs. Hargreaves (1995) describes ethos as the general tone of a school and argues that ethos *"is neither as rich a concept as the anthropological use of culture nor as readily turned into operational definitions as climate, both of which can be measured."* (p. 25)

performance: a belief in the educability of all students. Among Stoll and Fink's (1996) description of cultural norms that underpin successful school improvement was the belief that all children can learn. Sammons et al. (1995a) found that relatively poor results at GCSE were associated with secondary schools whose heads of department had low perceptions of pupil ability.

## The preconditions examined in this research project

This research will examine the degree to which the following preconditions were present in the 32 primary schools:

- A shared vision
- The direction of the shared vision
- A culture of collaborative planning
- The existence of a safe and orderly environment
- Acceptance of responsibility for pupil progress
- A belief in the educability of all pupils

This research will also seek to determine whether any of these preconditions were linked to school improvement or decline.

## School culture and homogeneity

The influence of culture on school effectiveness may reflect the degree to which that culture is shared and the consistency with which it is interpreted by teachers in a school. Murphy (1992) argues that schools which are underpinned by a tightly linked school culture are more effective:

> *"One of the most powerful and enduring lessons from all the research on effective schools is that better schools are more tightly linked - structurally, symbolically, and culturally - than the less effective ones. They operate more as an organic whole and less as a loose collection of disparate sub systems."* (p. 96)

Crucially, this homogeneity encompasses pedagogical practice:

> *"Components of the curriculum - objectives, materials, assessment strategies - are tightly aligned. Staff share a common instructional language. Expectations for performance are similar throughout the school community and rewards and punishments are consistently distributed to students."* (p. 96)

The research of Virglio et al. (1991) supports this view. Teachers in the more effective elementary schools in their study behaved in a more similar manner in the classroom than those in less effective schools. Not only did pupils spend a significantly greater amount of time on task, the variance between the most effective schools was only 19 per cent whereas in the least effective it was 71 per cent. There was also greater uniformity in the most effective schools in terms of classroom management and classroom instruction.

However, Feiman-Nemser and Floden (1986) challenge the reality of this view particularly where it relates to teaching:

> *"The assumption of cultural uniformity is, however, untenable. Teachers differ in age, experience, social and cultural background, gender, marital status, subject matter, wisdom and ability. The schools they work in differ in many ways, as do the groups of students they teach. All these differences may lead to differences in teaching culture."* (p. 507)

Thus teacher subcultures or different cultures may operate and, in some respects, could be the antithesis of the school culture. Weick (1976) describes schools as being essentially "loosely coupled" institutions, and when consensus and commitment are weak, different and often competing teacher subcultures prevail. Hargreaves, A (1992) has identified a typology of teacher subcultures based on degrees of collaboration. Where collaboration is weak a balkanised culture emerges which leads to the creation of subcultures with different perspectives on teaching and learning, the curriculum and pupil discipline. This lack of homogeneity can undermine pupil performance:

> *"Balkanization may lead to poor communication, indifference, groups going their separate ways in a school. This in turn can produce poor continuity in monitoring student progress and inconsistent expectations of their performance and behaviour."* (p. 223)

Hargreaves, D (1995) has devised a typology of four school cultures which includes elements of pedagogy and which could also exist as subcultures within a school. Among the chief characteristics of the '*traditionalist*' culture is pace, high expectations, frequent testing and regular homework; the '*welfarist*' school culture is characterised by informal pupil-teacher relationships and a child centred philosophy; the '*hothouse*' culture contains teachers who are pedagogical innovators who are under great pressure to involve themselves fully in most areas of school life; the '*survivalist*' culture lacks pace and direction with little focus on academic matters. Hargreaves argues that few school cultures would actually fall exactly into any of these typologies. However, he points out that such pluralism may be important to ensure that the needs of different pupils are met:

> *"Indeed whilst there is a general question of whether school effectiveness correlates with school culture, there is an equally important question of whether some cultures are more effective with certain kinds of teacher and certain kind of student."* (p. 39)

The research of Nias et al. (1989) has shown that consensus about the curriculum varied in the primary schools in their study. Although there existed a broad consensus among teachers about what children should learn, there was far less agreement on how children learn. This lack of unanimity in some primary schools led to small groups of staff building up their own pedagogical subcultures. Often these became the prevailing culture if the headteacher was able, over a period of time, to recruit new staff with similar views. As well as the existence of pedagogical subcultures within schools, there is some evidence that different pedagogical cultures exist within primary education in general. One of the objectives of this research is to determine whether different pedagogical cultures existed and whether they correlated with effectiveness or improvement.

**Pedagogical cultures and primary schools**

In 1995 Her Majesty's Chief Inspector of Schools suggested that there are pedagogical cultures in primary schools which depress academic achievement. He

argued that poor attainment levels in some primary schools were due to the existence of teachers whose views are almost anti intellectual.[15] He claimed:

> *"there are still a good number of teachers at the meetings and conferences I attend who continue to see primary education in terms of a stark dichotomy between the child and the curriculum. 'At the heart of primary education,' I am told, 'lies the child'. The curriculum, (that is academic subject knowledge) is, somehow, irrelevant, if not pernicious."*
>
> (Ofsted, 1995a, p. 11)

HMCI (1995) believes that this ideology has spawned a distinct culture of pedagogy which, in many ways, is responsible for poor reading standards in certain schools. He argues that this culture has assumed the status of an orthodoxy which has caused a degree of conformity among primary teachers. The idea of an orthodoxy of 'good primary practice' was put forward by Alexander (1991;1995) who argued that the power of these orthodoxies made many teachers feel obliged to follow them, even though they were fully aware of the shortcomings and problems they created. The dependency culture among many primary teachers led to certain classroom practices being revered as ends in themselves rather than means of raising pupil attainment. Significantly McCallum et al. (1993) found that resistance to the ethos which underpinned Key Stage 1 testing was strongest among a group of teachers who embraced a child centred view, and who tended to be found in schools where there was strong leadership and collegiality. This supports the view of Alexander et al. (1992) who argue that child-centredness can help to depress expectations by encouraging teachers to focus on a child's problems rather than his/her potential.

Alexander et al. (1995) trace this tradition, which they label "progressivism," back to the principles laid down in the Hadow Report of 1931 whose vision of primary education was heavily influenced by the ideas of John Dewey. According to Hadow, the primary curriculum was:

> *"to be thought of in terms of activity and experience rather than knowledge to be acquired and facts to be stored."* (p. 93)

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[15] A similarly negative assumption appears to be implicit in the proposals for teacher development outlined in the National Literacy Strategy (DfEE 1997b): *"Ultimately, we need a culture in which primary teachers themselves expect to adopt the best methods as a matter of professional pride" (para. 26 p. 19).*

The ideology of progressivism reached its apogee with the publication of the Plowden Report in 1967 which was underpinned by the theories of Swiss psychologist Jean Piaget. Out of the work of the Plowden Committee, a model of teaching and learning emerged which, according to Bennett (1976) and Alexander (1994) is characterised by the following features:

- child-centred; the child should be celebrated as a child and not an adult in the making;
- informal relationships;
- the pupils are active; pupils learn best by doing;
- learning by discovery;
- a prevalence of group work;
- a belief that knowledge is seamless; subjects can be artificial barriers which constrain the development of an holistic perspective;
- an integrated approach to the curriculum which is delivered through topics rather than subjects;
- individualised learning; each child has tasks appropriate to his intellectual and social needs;
- whole class teaching is rarely in evidence; the teachers role is one of motivator, facilitator and consultant;
- this method has been labelled progressive.

It is tempting to see the authority for this model lying solely at the feet of Plowden and Piaget. However, their ideas were refined and promoted by a cadre of inspectors, advisers and academics who helped to raise this pedagogical culture to the status of orthodoxy so decried by Alexander and Ofsted (1995a). For example, in 1985 the DES published the White Paper "Better Schools" that criticised teachers for directing pupils' work too much and not encouraging learning by discovery. The influence of this directive and the way it was mediated to schools is illustrated by an LEA advisory review of 1989 into one of the primary schools used in this research. The school was criticised for its dependence on manufactured schemes of work, particularly in Mathematics and English, and for teaching both subjects as discrete disciplines. The LEA review team invoked "Better Schools" to justify this criticism:

> *"Better Schools" 1985 stated that the teaching of language and mathematical skills in isolation or in a purely theoretical way was less effective than when they were associated with a wide ranging programme of work which included art and craft, history and geography, music, physical education and science."* (p. 3)

Alexander (1994) argues that the Plowden ideology was deeply flawed and led to the adoption of pedagogical practices that were not fully understood. Richards (1997) points out that Plowden's emphasis on individual learning was impossible to deliver in the large classes often found in many primary schools, yet Alexander (1996b) argues that many primary teachers willingly embraced progressivism because:

> *"It tended to exploit the habits of professional deference and dependence that the primary teaching profession had inherited from the elementary system and to induce in many teachers a powerful sense of guilt if their practice was not conforming to the required ideal."* (p. 27)

This polemic tends to devalue the positive aspirations enshrined within Plowden which motivated many teachers. Annabelle Dixon (1997), a primary school headteacher in Hertfordshire, wrote in the Times Educational Supplement of the inspiration provided by Plowden:

> *"It gave us confidence and it gave us our roots. To be a Plowden-trained or influenced teacher is, and was, to recognise through research that young children are natural academics and scientists. They love learning for its own sake and we could see even then how a reliance on competition as the sole incentive debased the coinage of education. The why we were teaching gave us our wings."* (p. 7)

Critics of progressivism also point to the undesirable influence which the child development theories of Jean Piaget had on classroom practice. Gipps (1992) has highlighted the way the theories of Piaget helped to shape a pedagogical culture based on individual needs and the principle of "readiness". She argues that Piaget's model of child development has lowered expectations:

> *"The other relevant aspect of Piaget's model is that children go through stages of intellectual development; this was widely interpreted as meaning that it is not possible to teach young children some things until they are 'ready' i.e. there are limits to their capacity to learn; the*

> *corollary of this is that certain concepts emerge spontaneously and by implication cannot be taught."* (p. 2)

It was not until the 'Great Debate' launched by James Callaghan's Ruskin speech in 1976, that serious questions began to be raised about the "progressive" methods being used in primary schools. However, the prevalence of these methods of teaching and learning is at best questionable. Plowden itself reported that only 10 per cent of primary schools followed the principles it advocated. Bennett (1976) identified 12 teaching styles used in primary schools which he condensed into three: formal; mixed; informal. He found that the majority of teachers adopted a mixed teaching style that contained elements of both formal and informal styles. HMI (1978) observed practice in 542 primary schools and labelled the styles they encountered: didactic and exploratory. They found that 75 per cent of teachers used mainly a didactic style and only five per cent used mainly an exploratory approach. This suggests that only one in 20 teachers in 1978 were true followers of the Plowden faith.

Experience may well have exposed the serious limitations of the philosophy of teaching outlined in the Plowden Report. Bennett (1987) argues that:

> *"Yet nowhere in the Report is there a careful analysis of the pedagogical subject matter and management skills required for teachers to fulfil the demands of the prescribed approach."* (p. 75)

A similar lack of clarity surrounded the work of Piaget:

> *"Ill digested Piaget led to confusion between his concepts of action and activity, which in turn led to other false assumptions such that concepts are automatically acquired via the manipulation of concrete objects. Teachers thus came to see themselves more as providers of materials than as solicitors of reflection and explanation."* (p. 75)

It is reasonable to assume that these shortcomings caused approaches to be modified. Whether this led to a wholesale rejection of the underlying philosophy of Plowden or Piaget is a different question, and one that this research project may be able to shed some light on.

## Progressivism and effectiveness

The effectiveness of the child-centred approach was questioned by Bennett (1976) and by HMI (1978). In their report on Primary Education, HMI (1978) reported:

> *"In classes where a didactic approach was mainly used, better N.F.E.R. scores were achieved for reading than in those classes using mainly exploratory approaches."* (para. 7.27, p. 95)

Indeed, HMI (1978) found that children taught by mixed methods obtained similar scores in mathematics and reading to those taught by didactic methods. However, these findings were challenged by Galton et al. (1980) and Gray and Satterley (1981) who questioned the statistical basis of the conclusions reached by HMI (1978). Aitken et al. (1981) reanalysed the findings of Bennett (1976) and found three distinguishable but overlapping teaching styles which related to differences in pupil achievement. The difference between two of the three styles, formal and mixed, corresponded to a six to eight month difference in reading age. Significantly, Aitken et al. commented:

> *"It is of interest that the mixed style which was distinguished in the cluster analysis by a relatively high frequency of disciplinary problems, and by the lowest use of formal testing, gives consistently the worst results in the achievement model."* (p. 184)

However, Bennett (1987; 1988) has pointed to the technical difficulty of classifying teaching behaviour in terms of styles since the latter consist of collections of different behaviours. This makes it very difficult to isolate the impact of particular aspects of teacher behaviour on student outcomes. Similarly, Mortimore et al. (1988) found it equally difficult to identify distinguishable teaching styles even when they used the sophisticated techniques pioneered by Aitken et al. (1981). Mortimore (1993) reported:

> *"The activities of the teachers in our sample* [JSP] *appeared to be too complex; depending on the task, they switched across styles too frequently for us to be able to classify these with any degree of certainty."* (p. 294)

As a result, Mortimore et al. (1988) concluded:

> *"our results indicate the value of a flexible approach* [to teaching], *that can blend individual, class and group interaction as appropriate."*
>
> (p. 254)

Despite the problems of definition, Kyriacou (1986) suggested that during the 1980's many Plowden features found their way into primary classrooms:

> *"In recent years, however there has been a move away from exposition-based teaching towards more academic work; this is based on tasks and activities which are much less teacher-dominated, ranging from independent project work to investigative activities where pupils work together."* (p. 57)

Alexander (1994) claims that progressivism was regional in its impact:

> *"It had centres of gravity - Oxfordshire, the West Riding, Leicestershire, London, Hertfordshire and Bristol in particular. Within these areas one could identify many schools whose practice was true to progressive principles. Elsewhere in England the range more typically included at one end barely updated elementary practice, at the other trappings of progressivism without the flair, coherence or understanding, and in between - perhaps the majority - a pragmatic and reasonably successful mix."* (p. 26)

Despite questions about the extent to which progressivism exists in primary schools, and the difficulties associated with identifying elements of progressivism in classroom practice, there are those who point to its pernicious effects on pupil attainment. Luxton and Last (1997) blamed the poor attainment levels achieved at Key Stage 2 tests in mathematics on the individualised learning approaches promoted by the ideas of Plowden. They argue that individualised learning makes it impossible for a teacher to interact with any pupil for any meaningful length of time. Sustained higher level cognitive interactions are most likely to occur when a teacher is interacting with the whole class.

A central aim of this research project was to ascertain if the beliefs and values of a Plowden/Piaget inspired culture of teaching prevailed in any of the primary schools in this study, and if it did, to see if this progressive culture correlated with measures of school effectiveness or school improvement derived from pupil reading test scores.

## Leadership and school culture

The direct influence of the managerial style and ideology of the headteacher on primary school culture has been well documented by Littledyke (1997). In his case study of a large primary school, the arrival of a new headteacher had a significant impact on pedagogical culture in the school. The importance of the headteacher in facilitating change in a school has been emphasised by many researchers including Stoll and Fink (1996) who argue:

> *"Our experience in attempting to bring about change suggests that effective leadership is a key determinant in deciding whether anything positive happens in a school or a school system."* (p. 101)

The powerful influence of the headteacher has been emphasised by Ofsted (1997; 1998) which reported a clear connection between weak leadership and weak schools. In 1995-6 leadership was judged to be poor in one in seven primary schools (Ofsted 1997); in 1996-7 it was judged to be weak in one in six primary schools (Ofsted 1998).

Hallinger and Heck (1996) have studied the extensive research into the impact of school principals on school effectiveness, and concluded:

> *"Schools that make a difference in students' learning are led by principals who make a significant and measurable contribution to the effectiveness of staff and in the learning of pupils in their charge."* (p. 1)

However, this view has not received universal support and has been challenged by Leitner (1994) who claimed that there appeared to be no direct relationship between how principals attempted to influence teacher behaviour and student achievement. The links may be complex, and indirectly mediated through the culture sustained by the headteacher. Sammons et al. (1995a) highlighted the importance of the cultural role which secondary school headteachers play in determining priorities in a school. Their case studies suggest that a clear emphasis on the importance of learning and achievement made it easier for all departments to function effectively, and conversely harder where such an emphasis was lacking.

Identifying those strategies through which primary school headteachers mediate their influence on the pedagogical culture of the school, was one of the questions explored by this research. School effectiveness and school improvement research have located a number of distinctive features of leadership that correlate with effectiveness and six of these characteristics were examined in this research project. The rationale for selecting each of these characteristics is described in the next section.

**The characteristics of effective leadership**

(i) Purposeful

Mortimore et al. (1988) identified purposeful leadership as one of the key features of an effective primary school. Sammons et al. (1995c) identified firm yet purposeful leadership as the first of eleven key characteristics of effective schools. DfEE (1997d) reported that one of the key factors in improving two primary schools taken off special measures was the appointment of two new headteachers who provided the firm, purposeful leadership that both schools had been lacking at the time of their original inspection.

(ii) Participative

Sammons et al. (1995c) identified a commitment to a participative style as another dimension of effective leadership. Rosenholtz (1989) described the significance of teacher ownership generated by:

> *"collaborative principals who uniquely rewove schools which had come altogether unraveled. They shook loose new elements of collegial interdependence, seeming to vastly expand teachers' sense of possibility and their instincts for improvisation."* (p. 208)

However, Sammons et al. (1995a) questioned the impact on pupil outcomes when secondary teachers were heavily involved in decision making:

> *"it is interesting to note that schools where "considerable teacher involvement in decision making" was identified by HoDs of Mathematics as a key factor in contributing to their school's effectiveness, had significantly lower effects on students' total GCSE performance."* (p. 27)

Excessive participation by teachers in decision making may reflect a lack of clarity over direction, and consequently may actually weaken ownership. It may also siphon energies away from classroom duties such as preparation and marking and thus undermine pupil outcomes. However, Ofsted (1996) reported that high standards in reading were clearly associated with cooperative planning that ensured consistency in the teaching of reading skills. Therefore, it can be hypothesised that a participative style can affect outcomes when it clearly relates to pedagogical issues rather than whole school issues. DfEE (1997d) reported that two headteachers who turned round failing primary schools used strategies that actively enlisted the involvement of teaching staff and governors, which in turn generated a sense of ownership and responsibility for the changes that were made. Perhaps of greatest importance is not participation per se but rather the degree of involvement of teachers in the decision making process, and the subject matter under discussion.

(iii) Efficient management

Among the three contextual elements that determine principal effectiveness, Slater and Teddlie (1992) linked leadership with management. Chrispeels (1992) has argued that a principal's management function can be a distraction from the instructional leader role:

> *"Principals can be distracted from the monitoring process by other school management issues or district demands on their time. The consequences of less monitoring appeared to be diminished implementation of staff development programs and weaker academic press or focus."* (p. 133)

However, Slater and Teddlie (1992) argue:

> *"the exercise of leadership depends upon sound management; the former is not possible without the latter. For leadership to work, schools and classrooms have to be well managed."* (p. 244)

(iv) Shared vision

The key to understanding the link between school effectiveness and leadership may lie in the values and culture of a school, their pervasiveness and appropriacy. Hallinger and Heck (1996) have argued that the principal's involvement in framing the goals of the school represents one of the most important areas of indirect influence that a principal has over school outcomes. Goldring and Pasternack (1994) studied elementary school principals in Israel and found that:

> *"the set of variables which was most useful in distinguishing between more effective and less effective principals was the goal emphasis of principals and the goal consensus among staff."* (p. 250)

Interestingly, Webb et al. (1996) documented the tension between the participative approach to management, a strategy supported by Ofsted, and the development of more directive styles which have resulted from an increase in external demands. The pace of externally imposed change, the greater accountability to governors, parents and inspectors, and a burgeoning quality assurance role, have all combined to encourage headteachers to adopt a more top-down approach to management.

(v) A focus on instruction

Hallinger (1992) has described the evolution of the role of American principal from manager to that of instructional leader during the 1980's. This change of role involved the principal becoming the source of knowledge about the curriculum and instruction. Principals who saw themselves as instructional leaders closely supervised classroom instruction, developed the school curriculum and closely monitored pupil progress. Principals who embraced the role of "instructional leader" also eschewed the administrative dimensions of their role in order to protect and personally monitor the quality of instructional time. Teddlie (1994) reviewed studies of principal behaviour, and identified five areas in which principals can affect teacher behaviour, all of which fall under the umbrella of instructional leadership: the selection and replacement of teachers, support through inset, frequent and personal monitoring of classroom behaviour, proper execution of the educational management function and promoting a positive academic climate.

However, doubts have been raised about the impact of instructional leaders on effectiveness. van de Grift (1990) examined a number of studies and concluded that the correlation between the instructional leadership score of principals and student achievement was at best weak. Chrispeels (1992) study of eight primary schools tends to support the thesis of van de Grift. Three schools that met the criteria of effectiveness had lower mean scores on instructional leadership than two schools that were clearly less effective. Leitner (1994) has examined the relationship between principal behaviour and student learning and concluded that the relationship between instructional management and student achievement was not statistically significant. Hallinger (1992) has argued that the role of instructional leader is giving way in the 1990's to that of transformational leader which empowers staff and parents. Interestingly, instructional leadership can have a negative influence if it is based on erroneous beliefs. Mortimore et al. (1988) found that schools in which headteachers placed a particular emphasis upon a narrow basic skills approach were weakly associated with poorer pupil progress in reading, mathematics and writing. However, a broader academic commitment appears to be positively associated with pupil progress. Sammons et al. (1996a) found that an overall academic emphasis within a secondary school was an essential precondition of academic effectiveness:

> *"A weak academic emphasis in the school and in the English department was found to be significant in accounting for poorer than predicted English and total GCSE scores in particular."* (p. 12)

(vi) Accountability and responsibility

According to Leitner (1994), developing ownership of a vision involved principals not only shaping attitudes and behaviour through establishing consensus on school goals, but also providing teachers with feedback about their performance, and encouraging and rewarding those teachers who performed well. Significantly, the two successful urban high schools in the study of Louis and Miles (1992), and the headteacher in the primary school described by Littledyke (1997), deliberately recruited staff who would "fit" the culture and values of their schools. Principals in high achieving schools used what he defined as the cultural linkage more than principals in

other schools. However, Louis and Miles (1992) viewed developing vision ownership as a more complex process in which staff are made to feel more accountable:

> *"sharing the vision is not just a matter of exhorting staff to believe but of sharing responsibility and accountability."* (p. 31)

Effective headteachers use certain internal mechanisms to create this culture of personal accountability. Harris and Russ (1995) reported that in the effective schools in their study, monitoring mechanisms were *"tightly in place and reinforced through both the academic and pastoral care systems."* (p. 14). Chrispeels (1992) reported that the stronger academic focus, found in the more effective schools in her study, appeared to be linked to the active role of the principal in monitoring the school improvement plan. Conversely Ofsted (1998) reported that the monitoring and evaluation of the quality of teaching were the weakest aspects of management in primary schools, with these functions being reported as unsatisfactory in four out of every ten schools inspected during 1996-7. The link with low standards of achievement was claimed to be unequivocal:

> *"Poor overall achievement, particularly persistent in some schools serving disadvantaged areas, is related to poor monitoring of standards and a management team which gives insufficient attention to the raising of achievement. Most headteachers need to give more attention to these aspects of their work in order to make better-informed decisions about how to raise standards."* (p. 28)

The significance of monitoring and evaluation may be just as important culturally as for the practical information that such a process yields. Monitoring student performance is of itself a symbolic act since it is a statement by headteachers of their priorities and, by definition, those of the staff. DfEE (1997d) described the practical benefits of the system of monitoring teaching and learning established in one of the primary schools which came off special measures:

> *"The monitoring served to identify those areas of good practice that could be shared and built upon and those areas of concern that needed to be addressed. This process also highlighted those staff whose professional practice was a cause for concern."* (p. 44)

MacGilchrist et al. (1997a) argue that the success of the *"corporate"* school development plan lies partly in the focus on improving teaching and learning and partly in the monitoring and evaluation strategies that are a central feature of the plan. Monitoring and evaluation strategies not only emphasise key goals, they also generate a clear sense of responsibility among teachers for the outcomes specified in the plan.

## Conclusion

The six dimensions of leadership outlined above are used in this study to determine whether the leadership shown by headteachers in improving or consistently effective schools was in any way significantly different from other headteachers.

Aspects of school culture and leadership may be critical factors in explaining why some of the 32 schools in this research improved or remained effective. However, they may only be significant in terms of pupil outcomes if they lead to the application of appropriate teaching and learning strategies in the classroom. Some of the claims made for certain teaching methods have already been raised in the discussion of progressivism. The next section of the literature review examines the respective merits of many of the most common strategies currently used in primary classrooms and, in particular, explores the research evidence for the efficacy of these methods.

# CHAPTER 4

## Literature Review: Teaching and Learning

*"I remember being told in college that there's no point in forcing a child to learn, they will come to it as a bud opens"* Headteacher of a junior school in Worcester. (TES, Primary Update, 24/1/97, p. 6)

### Introduction

Kyriacou (1986) identified three key tasks associated with classroom teaching: planning, presentation and monitoring, and reflection and evaluation. He argues that these three tasks form a continuous loop and embrace the main process by which teachers make decisions about pedagogical matters. Each task involves a complex subset of other decisions; at the planning stage, Kyriacou has identified over 30 considerations that have to be taken into account.

Why teachers choose certain teaching strategies over others is often related to beliefs about fitness for purpose and effectiveness. The fact that some schools in this research appear to make consistently more progress may be due to beliefs which teachers have in those schools about particular types of pedagogical practice. Their choice of teaching strategy may in part account for the progress their pupils make, since the strategy may be or may not be particularly effective in helping promote certain academic outcomes. The purpose of this chapter is to examine literature that relates to some of the common teaching strategies currently employed in primary schools in order to assess their efficacy. These strategies have also formed the basis of many of the questions used in the research instruments in this study.

### Effective teaching and learning

Most of the research over the past 20 years into teaching and learning has concentrated on identifying the main characteristics of effective teaching that appear to be linked to enhanced pupil outcomes. Rosenshine and Furst (1972) reviewed 50 correlational studies and identified nine variables associated with teacher behaviour that

consistently correlated with student achievement: clarity; flexibility; enthusiasm; task-oriented; criticism (negative correlation); student ideas; student opportunity to learn; use of structuring statements; multiple levels of questions. Walberg (1986) surveyed 19 reviews and two quantitative syntheses of research into teaching and identified five broad teaching constructs: cognitive cues, motivational incentives, pupil engagement in learning, reinforcement, and management and classroom climate - all of which correlate positively with student learning outcomes. Brophy and Good (1986) reviewed research into teacher effects on student achievement and identified 11 attributes of effective teachers which occur most frequently in research literature. Identifying individual variables, however, can lead to the misconception that they operate in isolation from one another. Westerhof (1992) has pointed out that learning gain is always the result of a combination of variables. It can never solely be explained by a single variable and he offers a particularly apposite example:

> *"little is learned when the curriculum is excellent and the method of instruction is co-operative but the students show a total lack of motivation."* (p. 207)

Other researchers have tried to synthesise a number of findings into broader categories. Creemers (1992) has developed a model that attempts to distinguish those variables which are aspects of effective teaching behaviour from those which he classifies as instructional strategy. The degree of generalisation that results from such syntheses is of little practical help in assessing the value of particular strategies. However, analysis of the empirical base used in the compilation of lists of variables is more useful and enables the relative claims of each variable to be assessed. Scheerens (1992) has analysed the degree of empirical support for some of the most important characteristics of school effectiveness. The two factors for which there is "multiple empirical research confirmation" are "structured teaching" and "effective learning time" (see Scheerens 1992 Table 6.1 p. 84). Teddlie, Kirby and Stringfield (1989) found that interactive teaching correlated with effectiveness; teachers in an effective school used this form of teaching almost twice as much as teachers in an ineffective school.

Much of the research into teaching and learning has used a process-product approach which is essentially correlational. Shulman (1986) has pointed out the

limitations of this approach as a means of enhancing understanding about effective teaching. He argues that in some respects the correlates are not specific enough:

> *"That aspect of teacher behaviour usually described is either classroom management behaviour (responses to misbehaviour, allocating of turns, establishment of rules) or generic instructional behaviour (use of lower or higher order questions, frequency of praise or criticism, wait time), rather than behaviour describing the substantive subject-specific content of instruction (e.g., choice of examples, sources of metaphors, type of subtraction algorithm employed, reading comprehension strategy demonstrated and explained, and the like)."*
>
> (p. 12)

Shulman also argues that the process-product approach suffers from a more fundamental weakness: it is essentially atheoretical. Although many behavioural elements have been successfully identified, researchers have yet to adequately explain how these elements actually contribute to learning gain. The emphasis in this kind of research is on what works rather than why it works. Detailed case studies offer a more fruitful alternative for unravelling the causal links. However, Shulman does not dispute the validity of the characteristics which researchers such as Brophy and Good (1986) have summarised.

Hopkins et al. (1994) argue that because research into teaching and learning is extensive and has been carried out in many different contexts and in many different ways, this more than compensates for methodological weaknesses in particular studies. Shulman himself acknowledges the important contribution made by the process-product method of research into teacher effectiveness in helping to raise pupil attainment:

> *"Teachers seemed capable of learning to perform in the manners suggested by the* [process-product] *research program and the performances tended to produce higher achievement among their pupils. Within the limits of whatever activities standardised achievement tests were measuring, the program was palpably successful. Not only were the proposed interventions effective, they were typically acceptable and credible to experienced teachers.."* (p. 11)

However, Harris (1995) is less optimistic. Her analysis of research findings into effective teaching behaviours leads her to conclude:

> *"whatever the relative merits of different teaching approaches or styles, the research findings reveal little concrete evidence in favour of one teaching style over another.....The major problem in looking at teacher effectiveness it would seem, concerns the sheer diversity of teaching situations and contexts."* (p. 3)

To some extent this may well be true, but exactly the same point could be made about research into any aspect of school effectiveness since all schools are equally complex and diverse. The correlates identified by Sammons et al. (1995c) provide a solid foundation to explore the complexities and interrelationships between correlates. Similarly, teaching is not a totally random or arbitrary activity, and Ofsted in particular has devised its own firm criteria to measure effective teaching. Matthews et al. (1998) report that these criteria are derived in part from the attributes identified by Sammons et al. (1995c). The research of Matthews et al. (1998) also confirmed the validity and reliability of judgements made by independent inspectors about the quality of teaching, using these criteria in both primary and secondary classrooms.

The remainder of this chapter explores in greater detail the practical or strategic implications of some of the features of effective teaching identified by researchers. For the sake of clarity, these features have been isolated and explored individually. It is important to stress that they are all dependent on other elements for their effectiveness. The list is not exhaustive but merely a focus on those elements for which there is a solid research base. The links between each attribute and the specific questions asked at the interviews and on the questionnaire can be found in Table 6.4, p. 110.

## Goals

Porter and Brophy (1988) reported:

> *"effective teachers are clear about what they intend to accomplish through their instruction, and they keep their goals in mind both in designing the instruction and in communicating its purposes to the students."* (p. 81)

One of the fundamental challenges facing British teachers are the plethora of important goals which schools, and ultimately, society set for teachers. These goals tend to exceed the resources available for their achievement and effective teaching may not simply be a

matter of clarity but also a narrowness of focus. This point was acknowledged by DfEE (1997b):

> *"It is a generally held view among primary teachers that the National Curriculum, even following Sir Ron Dearing's review in 1993, is both too broad and too prescriptive, especially in Key Stage 2. There is some evidence that this prevents schools from giving literacy sufficient priority. We share this criticism of the National Curriculum."* (p. 27)

Porter and Brophy (1988) report that some research suggests that teachers should not sacrifice some types of goal in order to achieve others:

> *"For example, one I.R.T. study found that elementary teachers who stressed goals concerning both academic achievement and socialisation were more effective in attaining both sets of goals than were teachers who placed a high priority on socialisation goals but a low priority on academic achievement goals."* (p. 78)

The findings of Teddlie and Stringfield contradict this view. Ineffective middle SES schools were characterised by principals who stated that the development of social skills were as important as teaching academic skills.

The issue may be one of balance. It is difficult to argue that academic skills should be taught in isolation; those teachers who do not abandon the academic for the social or vice versa may have the greater impact on pupil attainment. Stoll and Fink (1996) point out that most researchers agree that a positive pupil self concept is an important ingredient of effective learning. It appears that schools which eschew the affective or the social in their desire to focus solely on cognitive outcomes are likely to be unsuccessful. Developing a positive self-concept is an important motivational device, consequently school improvement strategies are often characterised by reward systems that are designed to bolster pupil self esteem.

**Giving pupils responsibility**

Staff in the primary schools used in this study often mentioned that one of their goals was to develop independent learners who could organise and manage their own

learning. They saw primary education as an important phase in weaning children off dependency on adults and laying the foundations of pupil autonomy. However, encouraging pupils to take too much responsibility for their own educational progress might have a deleterious effect on pupil outcomes. Part of learning to accept responsibility may involve learning from the consequences of failing to cope with responsibility. Lower pupil achievement levels may well reflect the degree of autonomy which a teacher gives their pupils. Lee and Smith (1996) found that achievement gains were significantly higher in schools where teachers took collective responsibility for pupil success or failure. Promoting high levels of pupil autonomy may weaken that sense of responsibility and accountability on the part of a teacher, a point supported by the findings of Porter and Brophy (1988) who reported:

> *"Teachers who accept responsibility for student outcomes are more effective than teachers who see their students as solely responsible for what they learn and how they behave."* (p. 78)

However, Gray et al. (1998) found that improvements in effectiveness in secondary schools appeared to be associated with the degree to which pupils were given responsibility to manage their own learning.

The conflict between giving pupils responsibility and ensuring academic progress may reflect a tension between the social goals of the school and the academic. Effectiveness may ultimately depend upon reconciling both. Significantly Mortimore et al. (1988) found that effective primary classrooms tended to be those where the freedom of pupils was controlled yet not totally removed. Teachers who provided a clear framework within which pupils could work, yet were still given a degree of autonomy, tended to be the more successful. Schools where pupils were given large amounts of responsibility over long periods of time, were those which were less effective in promoting pupil progress.

**Co-operative learning approaches**

This kind of approach involves pupils working together in pairs or small groups to achieve a task. The objective of this approach is partly social and the milieu is

designed to create conditions in which pupils learn the skills of negotiation, co-operation and compromise. Many advocates of group work argue that its objective is also political in so far as these skills are essential for the survival of a democracy in our society. Joyce and Showers (1988) and Watkins (1995) have documented the positive social outcomes of collaborative learning. Joyce and Showers (1988) conclude that this kind of teaching has substantial effects on the social behaviour of pupils who increase their feelings of empathy towards one another, and reduces aggressive and anti-social behaviour. Equally impressive appear to be the academic gains:

> *"Taken as a whole, research on co-operative learning is overwhelmingly positive - nearly every study has had from modest to very high effects. Moreover, the co-operative approaches are effective over a range of achievement measures. The more intensely co-operative the environment, the greater the effects, and the more complex the outcomes (higher-order processing of information, problem solving), the greater the effects."* (Joyce and Showers (1988) p. 34)

Shachar and Sharan (1994) support this view, and found that collaborative learning improves communication skills and promotes positive multiethnic relations amongst Western and Middle Eastern students. They also found that attainment scores were higher in classes taught through co-operative learning methods than in those taught by the whole class method which they define as the traditional Presentation-Recitation method. The latter of course may not be the same as *"whole-class interactive instruction"* which Reynolds and Farrell (1996) identify as one of the key classroom factors that accounts for higher achievement scores in Pacific Rim countries.

However, Galton et al's Oracle research (1980) reported that the incidence of co-operative group work in primary schools was under 10 per cent. Interestingly, Galton et al. also found that children tended to dislike group work because of the element of ambiguity and risk in it. Galton (1989) found that the most successful teachers in his study were those who appeared to eschew group work and regularly worked with the class as a whole. He argued that whole class teaching had the highest order of challenging questions and enabled children to learn by example. This view is also supported by the findings of Mortimore et al. (1988) who argued that teacher communication with the class as a whole increased the overall level of teacher -pupil

interactions. They found that the amount of time a teacher spent interacting with the class correlated positively with pupil progress over a wide range of areas.

Gipps (1992) argues that the development of language is a critical aspect of learning since:

> *"through language the young child learns, among other things to think.....research tells us that the adult-child interactions need to be sustained, challenging and extended rather than routine. The picture is thus of classrooms with an emphasis on language and challenge rather than 'busy work'."* (p. 22)

Galton (1994) questions whether co-operative group work is able to provide the same volume and quality of linguistic challenge as whole class teaching, and claims that pupils appear to spend less time on task when working in groups. This may be a reflection of the management demands which effective group work involves. The same point was made by Ofsted (1997) when it complained that evidence from inspections carried out during 1995-6 suggested there were too many primary schools in which teachers spent the bulk of their time managing groups rather than teaching them. Ofsted (1998) reported that the hardest challenge facing a teacher using group work is setting tasks that are sufficiently challenging for each group, but which at the same time allow the teacher to teach a group without other groups interrupting to seek help. The result is often the setting of undemanding work, and under such circumstances more able pupils are most likely to suffer.

The key to the success of group work may lie in the way groups are managed and, according to Slavin (1990), the expectations imposed on each group member. The problem with group work may also lie in the inherent management and pedagogical demands which this form of organisation imposes on teachers. Ofsted (1997) may well be right: whole class teaching may make fewer demands in terms of organisation alone. Unfortunately, those such as HMCI (1996) who urge the abandonment of group work, ignore the fact that many primary children are taught in small, usually rural schools. Whole class teaching may not be viable in all age classes of 30 pupils where chronological ages range from seven to 11, and whose National Curriculum attainment levels in English may range from Working Towards Level 1 to Level 6. In 1995, 46 out

of 237 primaries in the Suffolk School Improvement Project (19%) had less than ten pupils in Year 4. Alexander et al. (1992) reported that nationally the proportion of schools with mixed age classes increased from 50 to 70 per cent in the ten years since 1982. Group work in these schools may be a matter of exigency as much as ideology.

It is reasonable to assume that group work may be more prevalent in small schools yet this does not appear to correlate with lower standards of attainment. Richards (1998) has compared Ofsted inspection data for small primary schools (less than 101 pupils) with larger primaries for the period 1994-5. There appeared to be no marked differences between the small and larger primaries in standards achieved relative to pupil abilities, quality of teaching or quality of learning. During the inspection year 1995-6, standards of achievement at Key Stage 2 were judged to be good or better in more small primaries than in all the primary schools inspected during the year. Interestingly, the DfEE (1997b) appear to favour a mixed economy approach to the teaching of literacy which includes group work but with the instructional role of the teacher clearly defined. Thus the effective teaching of literacy:

> *"uses carefully sequenced whole-class, group and individual work to focus on strategies and skills, with the teacher combining instruction, demonstration, questioning and discussion, providing structure for subsequent tasks, and giving help and constructive response."* (p. 15)

**Higher-order thinking skills**

The use of "advance organisers" to enhance pupils' power of retention was originally promoted by Ausubel (1968) in the belief that they helped provide a framework upon which pupils could organise new material. Joyce and Showers (1988) have reviewed the large number of research studies in this field and concluded that the use of advance organisers does enhance pupil thinking both in the short and long term. The greatest impact appears to be on pupils who are at the concrete operational stage of thinking, that is the vast majority of Key Stage 2 pupils, and who find it difficult to assimilate abstract ideas. The effects of the use of advance organisers appear to be greatest on pupil recall of basic facts and concepts and it could be argued that these are the building blocks of higher order thinking.

Galton et al. (1980) and Mortimore et al. (1988) found that pupil progress was significantly enhanced when teachers used higher-order questions and statements. Ofsted (1997b) endorse this view and argue that effective teaching is characterised by:

> *"high levels of teacher 'higher-order' interaction with classes, high frequency of questioning (especially with challenge) and frequent provision of feedback."* (p. 15)

However, the definition of higher order questions appears to be different to that associated with advance organisers identified by American research. Higher order questions appear to contain a level of abstraction and imagination and require problem-solving responses. Advance organisers appear to be a kind of intellectual scaffolding upon which pupils can build a conceptual framework. The effectiveness of the use of this framework depends very much on the way these organisers are built into the teaching strategy employed. The more central they are the greater the effect:

> "*...structuring a course around organisers, organising presentations and assignments within the course, tying the organisers to activities that require their application, and illustrating them can have effects as high as two standard deviations.*" (Joyce and Showers, 1988, p. 36)

It is not the purpose of this research to explore the merits of one form of questioning against the development of a cognitive framework. The evidence is clear that both may be effective strategies for promoting a pupil's intellectual development. Effective teachers are likely to use one or both to achieve what Mortimore et al. (1988) define as "*intellectually challenging teaching*" (p. 258).

**Differentiation**

Many of the recent Ofsted reports on secondary schools in Suffolk have commented on the lack of differentiation. Twelve of the 19 inspection reports issued in Suffolk in 1993-4 identified differentiation as a "key issue for action." This has strengthened the view in some schools that teachers are better able to take account of individual differences by ability groupings rather than in heterogeneous groups. However, Mortimore et al. (1988) reported that only a quarter of the primary teachers in their study grouped pupils, for some time at least, according to their ability. Only 11 out

of 50 schools reported that they used setting with some classes and this was influenced by subject area; pupils were set more frequently for Maths than for any other subject. However, the situation appeared to be changing in primary schools from the mid 1990s. During 1994-5 the Suffolk School Improvement Project found that many schools were reviewing their policy on pupil grouping and some were replacing mixed ability grouping with setting. Ofsted (1997; 1998) reported that the use of ability setting was becoming more common in Years 5 and 6, particularly in English and Maths. Brooks et al. (1998) surveyed 245 primary schools to discover the strategies adopted to raise achievement levels at Key Stage 2; 14 per cent reported they had introduced setting by ability. DfEE (1997a) presented a similar view and argued that effective mixed ability teaching was only for the most skilful of teachers:

> *"Mixed ability teaching has proved successful only in the hands of the best teachers and should be used only where it is appropriate and can be seen to be effective. We would expect setting to be the norm."* (p. 6)

The assumption upon which setting is based is the belief that mixed ability groups are less effective than ability groupings in raising pupil outcomes, and there is some evidence of the positive benefits of grouping pupils by ability, although it is hardly extensive. Hallam and Toutounji (1996), in their review of international research, have concluded that there are academic benefits for some pupils when grouped by ability. Similarly, Sammons et al. (1997) found that some pupil grouping by ability appeared to correlate with overall attainment at the end of Key Stage 1. However, Scheerens' (1992) review of the research literature on streaming and ability grouping, led him to conclude that the benefits of ability grouping are not necessarily shared by all pupils:

> *"Studies on streaming or working with ability groups indicate that this type of teaching works more positively with the more gifted pupils, and that with less able groups - taking the average result of the large number of surveys - hardly any effect was found."* (p. 41)

Of course streaming or setting is not a type of teaching but rather a form of organisation, and Ofsted (1998) argues that setting creates a structure through which teaching can be more effective. Setting reduces the range of ability a teacher has to cater for and thus enables the level of work to be targeted more precisely. However, appropriate teaching methods still have to be used to ensure that pupils are challenged at

the correct level. Creemers (1994) is probably far nearer the truth when he argues that teacher behaviour appears to be far more important than how groups are organised.

Significantly researchers have not been able to identify a pure typology of differentiation. Teachers appear to respond to their pupils' needs in a variety of ways regardless of which form of organisation is in use. Creemers(1994) therefore concludes:

> "*...the forms of organisation of a classroom can contribute to effective instruction, but the effect is strongly related to teacher behaviour. In fact the teacher is the organiser of the classroom and the teaching-learning process.*" (p. 60)

It is clear however that effectiveness does depend on the teacher being sensitive to individual capabilities regardless of which form of pupil grouping is used. Mortimore et al. (1988) reported:

> *"There was some evidence that where pupils worked on the same task as other pupils of roughly the same ability, or when all pupils worked within the same curriculum area but on different tasks at their own level, the effect on progress was positive. In contrast, where all pupils worked on exactly the same task the effects were negative."* (p. 230)

**Discovery learning**

The belief that children learn best by doing, rather than listening, was advocated during the 1970's and 1980's. This assumption helped to change the role of a teacher away from instructor to facilitator, whose main purpose was to chart a pathway that would enable pupils to discover and assimilate the content of a topic. Learning, because it was individual and essentially active, thus became more meaningful. This form of teaching and learning was also meant to follow the natural spirit of enquiry of each child which would not be encumbered by epistemological barriers. Discovery learning has been defined by Kyriacou (1986) as 'investigational work' and involves pupils being granted degrees of autonomy where they are free to choose how to approach a task, and responsibility, where they are responsible for carrying out the task.

The focus of this form of learning is usually problem solving. Proponents of this approach argue that it fosters certain desirable social qualities and skills which are seen as crucial in later life. These include the development of initiative, and the ability to accept and discharge responsibility. It is also claimed that discovery learning deepens understanding beyond the superficial level of knowledge acquisition, and encourages divergent thinking. However, research challenges these claims. In 1978 HMI reported that only one in 20 classrooms used an exploratory approach to learning and that pupil test scores in mathematics and reading were significantly lower than pupils taught mainly by didactic methods. Mortimore et al. (1988) found that pupils achieved a higher level of attainment where the learning was structured, a view that is reinforced by much American research into classroom effectiveness (for example the syntheses of research into effective teaching by Fraser et al. 1987; Porter and Brophy 1988). Mortimore et al. (1988) also found very few classrooms where pupils were given complete freedom of choice over what they studied. Sammons et al. (1995a) found that there were poor effects on mathematics results in secondary schools where the head of mathematics saw promoting independent learning as a goal of the school.

**An integrated curriculum**

In its most common form, discovery learning is integrationist in terms of knowledge. Fostering a natural spirit of enquiry encourages pupils to break down subject barriers which inhibit an holistic view of knowledge. Learning is usually organised through a project or topic-based approach to the curriculum. Pupils work at their own pace and level, often with the assistance of task cards. Freed from the constraints of whole class teaching, the teacher is able to give one to one instruction. Advocates of topic or project work claim the following advantages:

(i) It develops an holistic view of knowledge and pupils were able to see the interconnections between subject areas and are also able to apply a number of wide ranging skills.

(ii) The degree of choice and control offered to pupils enhances their motivation.

(iii) Pupils are active learners rather than passive recipients of received wisdom. Their learning is thus deeper.

Detractors, such as Alexander et al. (1992), claim that this style of teaching lowers rather than enhances attainment levels. They argue that subject disciplines are some of the most important means by which human beings make sense of their world. Topic work, with its emphasis on children constructing their own meanings, denies access to these forms of thought. Project work also poses too great an organisational demand upon the teacher who, in attempting to meet individual learning needs, gets drawn into dealing with organisational or resource matters. Teacher-pupil communication is thus reduced to a lower order. The findings of Mortimore et al. (1988) support this view. They found that teachers who concentrated on one or two curriculum areas at a time had a positive impact on pupil progress. Having a variety of activities from different curriculum areas posed severe management challenges, which in turn undermined the necessary environmental conditions for learning, such as classroom order:

> *"levels of pupil noise, pupil movement and the amount of time spent on routine (non-work) contacts were higher where teachers tended to employ mixed-activity sessions (those where a class of pupils worked on three or more curriculum areas at the same time), and where teachers integrated curriculum areas in a topic- based approach."* (p. 240)

Alexander et al. (1992) see the heart of the problem with topic work lies in its undemanding nature:

> *"Too many topics amount to little more than aimless and superficial copying from books and offer pupils negligible opportunities from one year to the next."* (p. 22)

However, these difficulties not withstanding, Ofsted (1998) reported that some primary schools still retained a topic approach to deliver the requirements of the National Curriculum Programmes of Study for a particular subject. Commitment to this form of practice may also be inferred from Brooks et al. (1998) who reported that only a small number (27 out of 245) of primary schools had adopted some type of subject specialist teaching to raise achievement levels at Key Stage 2. Of course this may be a

reflection of the limited availability of subject expertise within many primary schools. Ofsted 1997, 1998 reported that in one in eight lessons at Key Stage 2 there were serious weaknesses in teacher subject knowledge and these were judged to have an adverse effect on pupil outcomes.

**Whole-class instruction**

Whole-class teaching is a term used to describe expository or didactic teaching, and involves a high level of interaction between the teacher and the whole class. This method is far more teacher directed than discovery learning and involves working on a single task with all pupils in a class at the same time. Smithers (1996) argues that schools should be focusing on what children have to learn in common rather than seeking to cater for individual differences or predilections. The logic of concentrating on what children must acquire in common, is whole class teaching. He describes the success of this method:

> *"In Germany, Switzerland and Japan, for example, the teacher introduces a topic and then through carefully graded questions and actually waiting for the answers, helps the whole class think it through. Important concepts are continually reinforced and not just encountered as they can be in self - paced discovery learning. The whole class moves forward in one."* (p. 18)

Smithers' cry is enthusiastically taken up by Woodhead (1996) who argues that primary teachers should spend 60 per cent of their time on whole-class teaching in mathematics and an average of 50 per cent in other subjects. There is, as yet, no evidence to support the prescription of any percentage of time for class teaching or indeed any other form of teaching. Indeed, Sammons et al. (1997b) reported:

> *"none of the* [process] *variables related to the amount of time reported to be spent on these approaches* [whole class teaching or individual teaching] *were found to be related to pupils' KS1 results. For the infant phase, therefore, a balanced approach which does not allow one method to dominate appears to be related to better pupil performance"* (p. 506)

Proponents of whole-class teaching are not advocating a return to the dull days of Mr. Gradgrind but a method of teaching which is a far cry from this stereotype.

Reynolds (1996) advocates: *"high quality interactive whole-class teaching"* and Ofsted (1995) claims that *"whole-class teaching need not be passive instruction."* Alexander (1996b) asserts that whole class teaching comes in many forms and that it is fairly universally used in primary schools.

Reynolds and Farrell (1996) suggest that one of the reasons for the far higher achievement scores of Pacific Rim countries in mathematics and science was the greater use made of whole class interactive teaching. However, questions have been raised about the validity of making international comparisons and, in particular, the technical difficulties in comparing tests and standards of achievement across cultures (Alexander 1996b; Tabberer et al. 1997). Alexander (1996b) also questions the claims of those who argue that one form of teaching ultimately equates with enhanced economic output. Alexander (1996b) points out that schools in Germany, Japan and Switzerland use whole class teaching as much as schools in Bangladesh, Zaire and Malawi. Gipps (1996) argues that it is very difficult to separate the influence of different cultures, such as those in more conformist societies in the Pacific Rim, from the efficacy of a particular method of teaching. Different countries also have different aspirations for their education systems. Alexander (1996a) argues that whole-class teaching per se is not the key issue:

> *"even more critical than the mode of organisation is the quality and character of the discourse between the teacher and pupil (and this, of course applies to every teaching method). The discourse can structure learning into high hurdles to stretch the very able minority, or (the classic continental approach) small steps which will ensure success for the majority. Like discourse everywhere, the classroom version varies enormously in pace, richness and effectiveness."* (p. 21)

Nevertheless, it may be that whole-class teaching makes it easier to achieve the quality of discourse essential to pupil progress.

Brophy and Good (1986) argue that whole-class instruction makes more efficient use of teacher time because it is easier to manage than group work; the teacher needs to plan only one lesson and is thus free to circulate and provide individual assistance. They point out that the management demands of group work are considerable:

> *"The small group approach involves preparing differentiated lessons and assignments and keeps the teacher busy instructing small groups most of the time (and thus unavailable to monitor and assist the majority of students who are working on assignments)."* (p. 361)

However, Rosenshine (1987) argues that individual interaction is important when students are being given independent practice, although the role is more a monitoring one with individual contacts being relatively short. Longer individual contact would deprive other students in the class of feedback. Bennett (1988) reported that pupil involvement or engagement in the curriculum was highest during whole-class teaching and lowest when children sat in groups. Mortimore et al. (1988) found that on average 60 per cent of teacher interactions were with individual children yet they also found that whole class communication had a very positive effect on pupil progress. They concluded:

> *"Effects tended to be positive where the teachers spent a quarter or more of their time in communication with the class as a whole."* (p. 228)

The frequency of communication between teacher and pupils had a profound influence on pupil progress. Whole class teaching increased markedly the number of interactions between teachers and pupils and:

> *"Most importantly higher order communications occurred more frequently when the teacher talked to the whole class."* (p. 254)

Reynolds (1998) also points that teachers who use whole class teaching spend more time monitoring pupil progress. Nevertheless, despite this evidence many primary schools appeared resistant to any form of didactic teaching whether it be in groups or a whole class. Ofsted (1997) complained that evidence from the 1994-5 inspections suggested there was still too little direct teaching in primary schools. Direct teaching was defined where for the bulk of the lesson the teacher was engaged in: *"explaining, questioning, pushing back the frontiers of the children's knowledge: in short, by teaching."* (p. 6)

## Direct Instruction

Whole-class teaching is an aspect of a much broader approach to teaching known as direct instruction or active teaching. Many American researchers have found that this approach promotes effective learning. It is highly structured and, according to Rosenshine (1987), involves teachers following a series of strategies that include:

(a) the teacher carefully structuring the learning experience;

(b) proceeding in small steps but at a rapid pace;

(c) giving detailed and more instructions and explanations than is usually necessary;

(d) having a high frequency of questions and overt, active practice;

(e) providing feedback and corrections, particularly in the initial stages of learning new material;

(f) having a success rate of 80 per cent or higher in initial learning;

(g) dividing assignments which are done at a desk into smaller segments or devising ways to provide frequent monitoring; and

(h) providing for continued student practice (over-learning) so that they have a success rate of 90-100 per cent and become rapid, confident and firm.

Scheerens (1992) concludes that this form of structured teaching is probably more appropriate in primary schools because pupils at this phase need to assimilate what he refers to as reproducible knowledge. However, Hopkins et al. (1994) report that this kind of prescriptive model of teaching is not appealing to British teachers, despite considerable evidence that this approach to teaching is very effective in terms of pupil cognitive outcomes. The reluctance of primary teachers to engage in direct teaching, reported by Ofsted (1998), may be explained by a different set of values and beliefs about the core purpose of teaching. Westerhof (1992) feels that the hostility towards direct instruction is because it may be perceived to be too authoritarian, and as such may blight the social and affective development of pupils. Testing reactions of teachers and headteachers to direct instruction was a method used in this research to help uncover values and beliefs about teaching and learning.

## Homework

A key variable in pupil outcomes appears to be time on task or "engagement time". Carroll (1963) was one of the first researchers to establish the link between time and pupil learning. His 'Model of School Learning' identified five classes of variables which accounted for variations in school learning, three of which were related to time. Scheerens (1992) concluded from his review of the research evidence on effective teaching characteristics that *"effective learning time"* is one of only two variables for which there exists *"multiple research confirmation"* (p. 84). He argues that one way of increasing effective learning time is to give homework or set more homework. A United States Department of Education report (1986) on research about teaching and learning emphasised the relationship between homework and student achievement:

> *"student achievement rises significantly when teachers regularly assign homework and students conscientiously do it."* (p. 41)

This report argued that homework helps to raise achievement levels because it provides an additional opportunity to learn. Fraser et al. (1987) examined research into the effectiveness of science education and found that the amount of homework was a significant independent predictor of science achievement and attitudes among 13 and 17 year olds. The value of homework is also supported by Ofsted (1998) and the National Literacy Strategy which recognises the invaluable opportunity which homework offers, and envisages parents spending 20 minutes each day reading or listening to their child read.

However, simply increasing the opportunity to learn does not of itself raise pupil achievement levels. Carroll (1963) points out that time of itself is not important but how the time is used. As Creemers (1992) so aptly says:

> *"The academic learning or student engaged time can be enlarged, but academic learning time is an empty vessel that has to be filled with learning, which is induced by teaching."* (p. 60)

Using that time effectively by employing certain teaching or learning strategies is more likely to raise outcomes. The amount of time spent on task may also be influenced by the ability of a teacher to manage the classroom so that the maximum amount of time is

spent engaged on academic activity. Teachers who keep pupils fully focused and on task may not necessarily be effective; the quality of the task is more likely to influence the quality of pupil achievement. Kyriacou (1986) suggests that this factor may explain why the use of project work has sometimes failed to produce the assumed gains in attainment.

Regular homework is one means which most secondary teachers use to increase the amount of learning time available to pupils. The contribution of homework to cognitive development is clearly linked both to the nature of the homework assignment, and the expectation of the teacher that it will be actually completed. Regular homework also has social objectives which, it could be hypothesised, will enhance the academic. Learning to work independently and organising one's own time outside the classroom are important characteristics of effective learners at every phase of education. Homework is also a means of more closely involving parents in the academic prowess of their children. It is therefore strange that despite both the cognitive and social benefits, few British primary schools regularly set homework in a formal sense. Mortimore et al. (1988) found that under a quarter of primary schools had a policy that homework should be set, and in most schools it was left up to individual teachers to decide whether or not to set homework. Indeed, 17 per cent of schools actively appeared to discourage the setting of homework. Reynolds and Farrell (1996) report that children on the Pacific Rim are set homework from the age of six, and that they spend more hours in school on more days. However, it appears that attitudes towards homework in primary schools may be changing; Ofsted (1998) reported that the use of homework was increasing in primary schools and that this was having a positive impact on attainment.

**Testing and assessment**

One of the most common differences between secondary and primary schools is the frequency with which tests or other kinds of formal assessments are set. Many secondary schools have annual examinations, and the introduction of SATs at the end of Key Stage 3 has strengthened the use of examinations and tests in many secondary schools. The pressure of GCSE results and the reduction in the importance of course work has probably contributed to an even greater frequency of testing and mock

examinations at Key Stage 4. By contrast the disappearance of the 11+ examination and the spread of comprehensive schools meant that for many years primaries lacked any form of public accountability in quantitative terms. A strong culture appears to exist in some primary schools that regards formal testing of any kind as something of an anathema. This may be an explanation for the fact that 21 per cent of primary and middle schools in Suffolk refused to report their Key Stage 2 assessments to S.C.A.A. in 1996. Where tests in primary schools were used, they were confined to specific curriculum areas such as reading and were used for diagnostic purposes rather than summative assessment. Certainly, test results were rarely communicated to parents or pupils.

Mortimore et al. (1988) found that 72 per cent of teachers used commercially produced tests to assess pupils' reading, although the situation was very different in other subjects. In mathematics two thirds of teachers made no use of tests at all. When allocating children to ability groups, only a small minority used tests.

The importance of testing has been highlighted by Carroll (1989) who relates the use of tests to issues of equity:

> "*Emphasising equality of opportunity means not only providing appropriate opportunities to learn (appropriate, not necessarily equal for all students), but also pushing all students' potentialities as far as possible toward their upper limit. Assessing students' potentialities (which differ markedly) implies that every available means, including carefully devised psychological and educational tests, work-sample learning tests, and many other ways of acquiring information about students, should be used to estimate, at least provisionally, what each student's potentialities may be, and their nature.*" (p. 30)

Scheerens (1992) argues that regular testing is important because of the opportunity it provides for students to practise and reinforce their learning, particularly if feedback of results is immediate. Scheerens views regular testing as a facet of "*structured teaching*", yet on its own testing can be a powerful aid to pupil learning. Not only do tests provide a clear set of instructional objectives upon which teachers can focus, they also enhance the environmental conditions under which teaching takes place. For most pupils, tests can raise motivational levels but they can also be de-motivating,

particularly when certain pupils perform consistently badly. However, the decision to make Key Stage 2 testing statutory in 1995 and to publish Key Stage 2 school performance tables in 1996, may have changed the antipathy in many primary schools towards testing. Between 1995 and 1997, Key Stage 2 test results in English in Suffolk improved dramatically: in 1995 48 per cent of pupils scored at level 4 or above; in 1997 67 per cent achieved a similar standard. This sharp rise may reflect the greater importance attached to testing in primary schools, and possibly the development of a more tactical approach to teaching strategy which parallels the kind of strategic changes which Gray et al. (1998) report that many secondary schools introduced to boost GCSE passes.

The use of tests is but one way of assessing and monitoring pupil progress. Mortimore et al. (1988) found that teacher judgements of pupils' cognitive ability were fairly strongly related to results of tests of reading, writing and mathematics administered as part of their research. Given the paucity of testing in mathematics and writing, these perceptions must have been formed through an ongoing appraisal of pupils' work in class. The soundness of their judgements may be an explanation for opposition to the greater use of tests in primary schools. However, evidence from the 1992-4 Key Stage 1 SAT results in Suffolk tends to contradict this view. Teacher assessment consistently diverged from test results in language and mathematics. Overall teachers appeared to underestimate the levels of attainment of pupils at the end of Key Stage 1 in reading and mathematics.

The findings of McCallum et al. (1993) suggest teacher assessments may be clouded by ideology. They identified three different types of teacher reactions to Key Stage 1 testing in 1991 and 1992 which reflected different beliefs about the nature of teaching and learning. The *"critical intuitives"* were rooted in a 'children's needs' philosophy whose lineage can be traced back to Plowden and Piaget:

> *"The children's needs ideologists resisted criterion referencing as being in tension with 'whole child' philosophy and are confidently critical of SAT tasks as being inappropriate to their own ideas of levelness."*
>
> (McCallum et al. (1993) p. 310)

This group rejected a systematic approach to Teacher Assessment which they saw as interfering with real teaching which embraces an exploratory view of learning. They relied on memory and 'knowing the child' to form their assessments. Significantly the *'critical intuitives'* brought biographical and contextual details to bear when deciding on attainment levels and saw the preoccupation with testing as a danger to children. At the other extreme were the *'systematic planners'* who integrated assessment within their pedagogical practice. Assessment was embraced for its diagnostic value and as an aid to increase pupil effectiveness. Attainment levels were based on firm evidence gleaned from recorded notes. The amount of effort made by a child or his/her home circumstances were clearly ignored when forming judgements about attainment levels. It seems clear that pedagogical ideologies have a profound impact on attitudes towards testing. Interestingly, McCallum et al. (1993) conclude:

> *"our informal judgement suggests that there are teachers within each group* [of pedagogical ideology] *whose pupils have both relatively high and relatively low standards of attainment"* (p. 308).

Thus attitudes to testing may reflect deeply held values which in turn may limit both the emphasis on, and use made of tests. Ofsted (1998) reported that procedures for assessing pupils' attainment were unsatisfactory in 30 per cent of primary schools and in many schools assessment data were not used effectively to inform planning or teaching.

## Conclusion

Much research into the effectiveness of teaching and learning strategies points to a divergence of practice in primary schools, and this research seeks to uncover possible reasons for these differences. The research also suggests that certain strategies such as whole class teaching, testing, the use of advance organisers, differentiation, a subject specific curriculum and homework may have a positive impact on academic outcomes. Strategies such as independent learning, co-operative group work, discovery learning and an integrated curriculum may not correlate as strongly with cognitive progress but may be more influential in the social and affective domains. Ultimately a commitment to particular types of pedagogical practices may reflect differing priorities and goals; these

in turn may be buttressed on different values and beliefs. This research sought to unearth this link by examining the relationship between school effectiveness and school improvement (measured in terms of pupils' reading progress) to a commitment to the above range of pedagogical strategies.

This section of the literature review has examined some of the more common strategies found in primary schools. However, the use of reading tests to define school effectiveness might mean that effective schools are not those that use particular general strategies such as whole class teaching, rather those that are particularly effective at teaching the specific skill of reading. The next chapter examines this issue.

# CHAPTER 5

## Literature Review: The Teaching of Reading

*"It is certainly significant that when David Blunkett puts together his task group to sort out the problem of literacy in primary schools, its' two leading members come with backgrounds not in literacy or primary education but in school effectiveness and school improvement."* Alexander (1996b, p. 6)

### Introduction

The previous chapter examined some of the general issues relating to teaching and learning. Shulman (1986) has argued that much school effectiveness research is too generalised and fails to examine the subject specific dimensions of teaching which relate to particular skills or content. The teaching of reading is clearly a specific skill and it may be that reading proficiency is simply a reflection of the ability of the school to teach the skills of reading and nothing more. The use of reading scores, in this research, to measure overall effectiveness and improvement may therefore be invalid. Hence this section examines some of the specific issues surrounding the teaching of reading. However, it is not the intention of this review to cover every aspect of the current debate about the most effective method of teaching reading, rather to examine only those issues that are germane to the theme of this research.

### Reading and general cognitive progress

This research measures school effectiveness and school improvement in terms of the mean aggregate difference in individual reading scores between Year 2 and Year 4. It could be argued that these reading scores are not narrow indicators of effectiveness since they reflect more than the school's ability to teach children to read. Performance on the reading tests may reflect general cognitive progress. Bloom (1976) has shown that reading ability, as measured by reading comprehension, is highly correlated with school performance in most school subjects. In language, arts and literature Bloom found a correlation of 0.7 between grade 6 and 8 and similarly between grades 9 and 12. In mathematics the correlation between grades 6 and 8 was equally high (0.72), although

slightly less between grades 9 and 12 (0.54). In London junior schools Mortimore et al. (1988) found positive correlations between reading attainment and writing (r = 0.69 to 0.74 in each year); between reading attainment and oracy (r = 0.63) and between reading attainment and written mathematics (r = 0.7 to 0.81 in each year). The work of Pedersen et al. (1978) demonstrated the long-term impact of the first grade teaching of 'Miss A,' whose pupils were given a significant advantage that stayed with them throughout their school careers and beyond. Tizard (1993) found a correlation of 0.61 between reading scores at age five and performance at eleven on the Suffolk Reading Test. Results of the Suffolk Reading Test between 6+ and 8+; 8+ and 10+; 10+ and 12+ and 12+ and GCSE (see Table 6, p. 122) suggest performance on the Suffolk Reading Test could be regarded as a reasonable proxy indicator of general cognitive progress. Indeed, preliminary research in 1996 and 1997 in my own school suggests a strong correlation between performance on the 12+ Reading Test and performance at the end of Key Stage 3 in English (r = 0.8), Maths (r = 0.9) and Science (r = 0.8).

This relationship between performance on a reading test and general cognitive progress is not too surprising. Bloom (1976) points out that most of the learning materials used in school, regardless of subject, require reading. Riley (1996a) argues that the ability to read is more important than simply the ability to decode letters; it also develops a child's ability to think in a clear and meaningful way:

> *"Literacy enables clear, rigorous thought that can both follow and lead an argument - an essential attribute for academic success."* (p. 6)

A primary school's overall academic effectiveness may therefore hinge heavily upon its success at teaching reading. Indeed the long term link, between reading scores at age seven and overall GCSE performance nine years later, has been well established by Sammons et al. (1995b) and Goldstein and Sammons (1997).

There is some evidence that reading scores may also reflect more general pedagogical issues. During the late 1980s, Suffolk LEA reported a worrying decline in mean reading scores for seven year olds and nine year olds. In 1994 the Chief Education Officer for Suffolk reported that the downward trend had been reversed and was now upwards. Mean reading scores for seven and nine year olds in Suffolk had

returned to levels similar to those in the mid 1980's. Yet in 1993, Key Stage 1 National Curriculum test results for Suffolk offered little support for this assertion since they showed a slight fall over the previous three years. The explanation appeared to lie in the quality of teaching. The Suffolk Schools Review for 1993-4 reported that in the 20 primary schools reviewed by LEA advisers, the quality of teaching was less than satisfactory at both KS1 and KS2 in a significant number of lessons (between 30 and 40 per cent) in about 30 per cent of schools visited. On a national level the problem appeared to be of a similar scale. Ofsted's Annual Reports for 1993/4, 1994/5 and 1995/6 testify to the problems of teaching standards at Key Stage 2. More lessons were deemed to contain unsatisfactory or poor teaching at Key Stage 2 than any other key stage, and overall progress in reading was reported to be less than satisfactory. This picture is reinforced by national test results. The 1995 Key Stage 2 National Curriculum Test results showed that half the 11 year olds in England failed to reach Level 4 in English, the standard expected of an 11 year old. However, in 1996 the figures showed a substantial improvement with 56.3 per cent reaching Level 4 in English. By comparison, at the end of Key Stage 1, 75 per cent of 7 year olds reached Level 2 or higher in English, the standard expected of a 7 year old.

Ofsted's 1996 enquiry into the teaching of reading in inner city primary schools in London reported that a significant number of pupils were not making the progress they should. The report stated unequivocally that the main reason was weak teaching. Richards (1996), however, challenges this view and argues that changes in testing policy makes it invidious to draw any valid conclusions about changes in performance at Key Stage 2. He also points out that HMCI reports actually state that in 1994-5 standards of reading, at both Key Stage 1 and Key Stage 2, were less than satisfactory in only 10 per cent of schools. Others argue that the perceived decline is a possible consequence of an overloaded National Curriculum (see Campbell and Emery 1994; Alexander et al. 1995) or a lack of subject expertise (Ofsted 1996).

**Two schools of pedagogy: real books vs. phonics**

Teaching pupils to read is a complex, technical process. There is no one clearly defined pedagogical practice for teachers to follow. Riley (1994) reports:

> *"Models of the reading process differ and are partisan. The 'bottom-up' theories propose a sub skills approach suggesting that reading is learned by manipulating the smallest units of language initially i.e. letters, words. The 'top-down' theories suggest that the search for meaning is central from the outset and the main strategies for decoding words are prediction and guessing."* (p. 6)

Riley argues that these two perspectives have a great influence over how reading is taught and from them has emerged two schools of pedagogy: those who believe in phonics and direct instruction and those who believe in a whole language approach. The debate has often been characterised as 'phonics' versus 'real books.'[16] Yet fundamentally these pedagogical positions are based on beliefs about how children learn. It was not the purpose of this research to debate or indeed to examine the respective merits of each approach. However, these two approaches appear to mirror elements of the broad pedagogical cultures outlined earlier in Chapter 3 (see pp 65-71).

Adams (1991) has identified the main characteristics of the 'whole language' approach in the USA as:

(i) child centred instruction;

(ii) the integration of reading and writing;

(iii) the disavowal of the value of teaching or learning phonics; and

(iv) the belief that children are naturally predisposed towards written language acquisition.

Riley (1996a) argues that this view has led to the teaching of reading through "real books" in the U. K:

> *"This last misleading term* [real books] *was first used in the early 1980's and referred to story books written for children. 'Real books' were analogous to 'real ale' or 'real food.' The term was coined in antithesis to books written for a published structured reading scheme."* (p. 21)

The strategy used to teach pupils to read may therefore reflect a broader pedagogical culture. The use of reading scores as a measure of effectiveness may not only be a valid

[16] The position of Ofsted (1997) is clear: *"Standards in literacy will rise when more schools improve the teaching of phonic work within a systematic programme for teaching reading."* (p 6)

indicator of cognitive progress; it may also reflect a much broader and deeper set of values and beliefs about teaching and learning.

However, the evidence for the existence of these two approaches in English classrooms is hardly convincing. Hobsbaum (1994) in her research into the teaching of reading concluded:

> *"there is a great diversity in the approaches to literacy used by class teachers and a general eclecticism which makes their practices hard to categorise."* (p. 17)

Riley (1994) in her survey of 329 reception teachers found a similarly diverse range of approaches being used. The teaching of reading through real books and stories was only mentioned by 19 per cent of teachers surveyed. Although this was the most frequently mentioned approach, it is hardly evidence of a strong pervasive pedagogical orthodoxy. However, Riley points out that whilst this eclecticism is in many respects highly laudable, it may also reflect an absence of real understanding of the reading process.

**The teacher effect**

Riley (1994) found that although the ability of the child to identify and label letters of the alphabet when they first entered school was the most important factor in predicting future progress, the teacher effect was still important. Some groups of children made greater or less progress than would have been expected given their entry level skills. Sammons et al. (1997b) found that variations in school and classroom practice had as great an influence on end of Key Stage 1 attainment as did intake factors, such as age, gender, fluency in English and socio-economic disadvantage. Tizard (1993) also found that pupils' pre-entry test scores only accounted for half the variation in test scores at the end of Year 2. The remaining half depended on two factors: teacher expectations and the school curriculum. Pupils for whom teachers had higher expectations were introduced to a wider curriculum than those who had similar entry level skills but were not expected to make as much progress. This differential level of expectation was not confined to individual children but to whole classes of children. The Infant School study of Tizard and her colleagues also found that not only was the

first year of school of critical importance in influencing later reading prowess, reception teachers differed markedly in their aims. Tizard (1993) reported:

> *"Reception teachers have very varying aims. We found that the majority put most emphasis on settling the children into school, teaching classroom discipline, etc., and only a fifth said that academic progress was one of their two main aims."* (p. 80)

Riley (1994) found that the percentage of respondents in her survey who said that their main priority was social, that is to help the child settle in to the demands of formal schooling, was lower at 50 per cent. Riley argues that this may be a positive outcome of the priorities forced on schools by the introduction of the National Curriculum. Riley (1994) also found that reception teachers did not appear to value the reading skills which pupils possessed on entry (that is alphabet knowledge, ability to write their names and concepts about print) and many failed to match their teaching strategies to the level of pupil prior knowledge. Sammons et al. (1997b) reported that among the classroom strategies which were identified as contributing to enhanced attainment at the end of Key Stage 1, the following were particularly important:

> *"the practice of teachers listening to pupils reading aloud on a daily basis; and a combination of teaching approaches, neither spending very high nor very low percentages of time teaching groups (about 50-60% of teaching time)."* (p. 506)[17]

A further example of the importance of the teacher effect can be seen in the success of the Reading Recovery programme of Dame Professor Marie Clay that has been well documented by among others Hobsbaum (1994), Sylva and Hurry (1997), and DfEE (1997b). Apart from the technically grounded theory of literacy instruction that underpins the whole programme, many of the elements of the instructional programme are, in essence, no different from those associated with effective teaching in general. Cashdan (1996) argues:

> *"Reading recovery scores because not only is it founded on good methods, it also demands of the teacher a constant 'tuning in' to the needs of the pupil being taught, a systematic review of what has been achieved and a 100% constructive use of teaching time."* (p. 42)

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[17] The National Literacy Strategy offers a similar prescription for the use of time in the proposed daily literacy hour: *"the project requires that for 60% of the time pupils are working with the teacher either in whole class or in groups"* (DfEE 1997b, p. 17)

Thus the teacher effect is clearly an important factor in the acquisition of the skills of reading, and this may in turn relate to teacher values and beliefs about how children learn best, and the core purposes of primary education. Yet successful teaching is not simply a matter of deciding which is the best technique for fostering word recognition, it is also dependent on more general "school climate" factors that are often the preconditions for effectiveness.

**The school effect**

Ofsted (1996) identified the following "school climate" factors that had a positive influence on the teaching of reading:

> *"High standards* [of reading] *are clearly associated with: co-operative planning to ensure a consistent and positive approach to the teaching of skills, including phonics; a good range of books; frequent opportunities for pupils to read to their teacher; the effective involvement of parents; and clear diagnostic assessment procedures."* (p. 2)

These factors may explain the significant differences in progress made in schools that shared similar catchment areas and purported to be using the same technique of teaching reading. Ofsted (1996), in its study into *The Teaching of Reading in 45 Inner London Primary Schools,* found that some schools which operated in similar contextual circumstances, were demonstrably more effective than others, with an average gap of six months in reading age at Year 6 between the successful and the less successful schools. This data was correlated with qualitative data from Inspection reports, and for Year 6 pupils Ofsted judgements about the quality of teaching were correlated with reading age gain. The report claims that teaching which could be classified as 'good' was found in only one quarter of lessons observed. Many children were deemed not to be making the progress they should and this was a reflection of weak teaching. However, Mortimore and Goldstein (1996), and Riley (1996b) have severely criticised the conclusions drawn by Ofsted (1996). They argue that the evidence base does not measure progress over time and makes no allowance for intake factors by using multilevel modelling. It is therefore impossible to draw any conclusions about relative effectiveness or the efficacy of methods such as phonics or whole class teaching. The study is condemned for

*"cherry picking"* to support a particular belief on the teaching of reading. Riley (1996b) also argues that the report has a simplistic view of the teaching of reading:

> *"the report does not acknowledge that literacy is an extremely complex and multi faceted process requiring a balance of approaches in order to develop uniformly the interrelated skills that are required for fluent reading and writing."* ( p. v )

Despite the serious questions raised by Mortimore and Goldstein (1996) about its conclusions, Ofsted (1996) does provide a useful description of some of the practices in a number of primary schools. It found that in those schools where progress appeared to be limited, the teaching of phonics prevailed but in a very ad hoc way. Teachers did not appear to follow any systematic structure:

> *"Simple word recognition was widely taught but the systematic development of phonic skills, knowledge and understanding were rare. In general, phonic work was often superficial and ill planned."* (p. 13)

The importance of a carefully planned structure for the teaching of reading may therefore be as important as the method used. Sammons et al. (1997b) found that a clear, whole school policy on reading based on either phonics or learning whole new words, was an important factor in contributing to enhanced attainment at the end of Key Stage 1. Hence, organisational structure may equate with effectiveness. The content and implementation of a reading policy may also reflect other values that buttress beliefs about the degree of systematic planning, monitoring and evaluation deemed to be necessary in a primary school.

The effectiveness of the real books or phonics approach may not solely depend on the integrity of its theoretical infrastructure, but on the way in which the theory is applied in the classroom. This is probably true of many issues of pedagogy and therefore school effectiveness. It may be that the answer lies somewhere in the professional culture in a school. The rigour and concomitant attention to detail in planning, delivery and evaluation are dimensions of school culture that lie at the very heart of effectiveness. Slavin (1997) perceives an unstinting determination to prevent failure as the central feature of the culture that underpins his "Success For All" programme. This programme has significantly raised standards of reading in schools

that serve some of the most impoverished neighbourhoods in the USA and has inspired elements of the National Literacy Strategy in England. "Success For All" is rooted in a culture of "zero tolerance" of failure:

> *"The key ingredient is relentlessness, a commitment through the school to see that every child makes it, no matter what it takes."* (p. 27)

Riley (1996b) has also pointed to the central importance of frequent monitoring and record keeping and their interaction with effective teaching strategies:

> *"the frequent monitoring of reading progress has long been advocated by experts such as Marie Clay. Systematic scrutiny of reading through miscue analysis or running reading records, provides the cues (semantic, syntactic, phonological and visual) that the child is using. This insight enables effective teaching to occur so that weaker cueing strategies can be developed and fluent reading developed. This careful monitoring of progress will ensure that children are grouped for teaching purposes and allows for groups to be changed in line with different rates of progress."* (p. v)

Ofsted (1996) reported that reading test results were rarely used for diagnostic purposes and were not used to form reading groups. Group work, as a means of teaching reading, was rarely found to be effective because teachers tended frequently to create too many groups or activities which in the end proved an unmanageable burden. Mixed ability groups achieved little in promoting progress since the pace of these groups appeared geared to that of the slowest. For pupils in Year 2, the most common strategy used by teachers was individual instruction. The Report claimed that teachers seemed unaware of its limitations:

> *"Listening to children read is a necessary but far from sufficient element in the teaching and learning of reading. It was most successful when it was diagnostic and related to an effective recording system designed to correct pupils' errors through a planned sequence of work. But this level of rigour was rare."* (p. 16)

The school effect can also be manifest in other ways. Riley (1994) found that children who were not able to adjust to school were four times less likely to be able to read at the end of the year. Ofsted (1996) also highlighted the issue of time and claimed that some schools were over generous in the time allocated to reading almost to the

neglect of other National Curriculum subjects. The issue for the teaching of reading may be more to do with how the time allocation is used rather than the amount of time allocated by the school, although proponents of the National Literacy Hour might take a different view.

To conclude the evidence from research has suggested that the following 'school climate' factors appear to relate to the effective teaching of reading (Riley 1994; Ofsted 1996;1997;1998; DfEE 1997b[18]):

1. making progress in literacy a key goal of the school;
2. a consistent and systematic approach to the teaching of skills;
3. the effective involvement of parents;
4. clear diagnostic assessment procedures;
5. whole class teaching;
6. frequent monitoring of reading progress;
7. an appropriate allocation of time; and
8. students grouped according to different rates of progress.

My research sought to examine the significance of these eight factors by relating them to the effectiveness and improvement paradigms used.

**Reading and academic culture**

It is tempting to view teachers in the primary schools described by Ofsted (1996) as being at best poorly trained or at worst wilfully negligent. The Report does not address the fact that these teachers are probably neither, and that their practice may reflect a coherent set of values and beliefs about how children learn. These have been developed and refined on the basis of experience and, as Richards (1996) remarks, most teachers are:

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[18] DfEE (1997b) list ten factors, two of which are outside the scope of this research: the effective use of classroom assistants and capitalising on pupils' enthusiasm.

> *"more concerned with the national curriculum than subverting it and all too conscious that the 'core business' is the teaching of literacy and numeracy."* (p. 6)

Improving reading scores may therefore lie in changing teachers' beliefs about effective teaching. This is perhaps best exemplified by the persistence of the 'caught not taught' philosophy of teaching reading that may underpin the possible antipathy towards whole-class teaching. This philosophy claims that simply exposing children to the written word through silent free reading may, through a process of osmosis, lead to the child mastering letter sounds and expanding his or her vocabulary. Thus the process of exposing children to the written word becomes sufficient. However, as Ofsted (1996) points out this is not sufficient:

> *"because phonics is a set of culturally determined conventions it cannot be left to be 'discovered."* (p. 9)

The alternative philosophy that reading must be 'taught and not left to be caught' leads to a more formal teaching approach that may in turn promote a culture of learning. The skills of learning to read involve developing a pupil's ability to memorise, retain and recall which are all basic features of an academic culture. This culture and its intrinsic interest in knowledge, its transmission and absorption underpin all aspects of the effective delivery of the curriculum. The basic skills needed to acquire knowledge are no different from those required to learn word shapes or sounds. An academic culture promotes these skills and thus may enhance the ability of pupils not only to read but also to develop their vocabulary and hence their literacy skills. Indeed, the correlation between reading tests, such as the Suffolk Reading Test, and overall GCSE performance suggest that these skills are not unique to reading but are part of an underlying subset of skills which service the effective delivery of the curriculum. For example, success in GCSE science is not simply a matter of being able to read but also to understand, retain, recall and apply.

Schools that emphasise process over product may therefore be less successful in teaching pupils to read than those educated in a more knowledge based culture. The emphasis on the knowledge culture redefines the role of the teacher to one of transmitter rather facilitator. Indeed, Reynolds (1996b) has argued that the reduction in the formal

role of the teacher has helped to diminish the knowledge culture in classrooms and so create the wide range of achievement levels that distinguishes the British educational system from its Far Eastern rivals:

> *"in Britain we have systematically reduced the constant of the teacher to maybe 20% of total lesson time, and shifted the burden of learning to children and their achievement-differentiated groups. It is not then surprising then that children may both receive less knowledge and show a greater range."* (p. 21)

The National Literacy Strategy emphasises the importance of an academic culture in creating the optimum environment for the development of literacy. It identifies two factors in particular as contributing to the creation of this climate of "academic push": the use of regular homework and the priority given in the school's goals to high levels of achievement. This research sees the concept of an "academic push" emanating from the overall pedagogical culture of a school. The commitment to contributory factors, such as homework and academic goals, is ultimately to be found in the values and beliefs of teachers in a school. This research seeks to determine how far this academic culture exists in the 32 primary schools forming the subject of the study and whether it correlates with improving reading scores or sustained effectiveness.

# CHAPTER 6

## Research Design and Methodology

*"to understand teaching from teachers' perspectives we have to understand the beliefs with which they define their work."* Nespor (1987, p. 323)

### Unearthing values and beliefs about teaching and learning

One of the main aims of this research was to investigate the links between pupil outcomes and school culture. In terms of ontology this research assumes that school culture is not a reified object that exists independently, rather it can only be found in the thought processes of teachers. Pollard (1980), Huberman (1992) and Nias et al. (1989) have all argued persuasively that teacher values, and therefore culture, can only be uncovered by examining teacher thinking. Clark and Peterson (1986) concur:

> *"It is within this context* [teacher thinking] *that the curriculum is interpreted and acted upon; where teachers teach and students learn."* (p. 255)

Therefore, the methodological challenge facing this research was to employ instruments that would help reveal teacher thinking about pedagogical issues, and thus enable authentic values and beliefs to be identified.

Empirically it is easier to research into teacher behaviour and student behaviour simply because they are observable. Interpreting the evidence is far more difficult but, at the level of data collection, it is less complex than obtaining reliable data about teacher thought processes. The latter, by definition, are impossible to observe and can only be garnered through the medium of the teacher themselves. Obtaining a clear insight into teacher thinking from teachers themselves can be problematic. Feiman-Nemser and Floden (1986) point out that asking teachers to explain their reasons for a particular action will not necessarily guarantee that researchers can obtain a reliable picture of the perspective of a teacher. This is partly due to the fact that teacher beliefs are not only often deep seated, they are also seldom articulated, as Nias et al. (1989) point out:

> *"...these values themselves appeared to be an expression of beliefs to which it was very hard for an outsider to gain access because, being shared and understood, they were seldom voiced."* (p. 10)

Indeed, Nias et al. (1989) also claim that in some cases beliefs are so deeply buried that individuals do not even know what they are. The central objective of the research instruments used in this project was to attempt to locate and uncover those deeply held beliefs and values.

**The research instruments**

This research employed four main instruments: focused interviews with five headteachers and 10 teachers; a questionnaire; data from the Suffolk Reading Test and Ofsted reports.

**The focused interview**

A decision was made to use the focused interview method. Cohen and Manion (1994) argue that the interview method enables the researcher to go into greater depth than other methods of data collection. It enables researchers to explore in detail the motives of a respondent, and the reasons why they answer in a particular way.

**Constructing the interview schedule**

In constructing the interview schedule both open-ended questions and scale response items were used. Cohen and Manion (1994) describe the advantages of open-ended questions thus:

> *"they are flexible; they allow the interviewer to probe so that she may go into more depth if she chooses, or to clear up any misunderstandings; they enable the interviewer to test the limits of the respondent's knowledge; they encourage co-operation and help establish rapport; and they allow the interviewer to make a truer assessment of what the respondent really believes. Open-ended situations can also result in unexpected or unanticipated answers which may suggest hitherto unthought of relationships or hypotheses."* (p. 277)

Open-ended questions are more difficult to code. Nias (1993) used open-ended questioning techniques to research into the professional case histories of a group of primary teachers. The task of analysing the resulting data was a formidable:

> *"To start with I was overwhelmed by the sheer quantity of data. The open-ended nature of much of the questioning and my search for concrete examples also meant that there were few ready-made categories built into the interview responses."* (p. 137)

The use of scale items produced data that was more easily quantified. The data collected through scaled responses enabled the open-ended responses to be checked for consistency. With this in mind, a draft question schedule (see Appendix 1) was developed which consisted of four sets of scaled questions (nos. 2, 3, 5 and 6) with the remainder (questions 4, 7 and 8) being open ended. However, as Belson (1986) points out, the use of scaled questions is not without its problems. At least 16 per cent of respondents in his research into the reliability of a seven point scale did not understand the meaning of a scale position, although significantly this appeared to be closely linked to the educational background of respondents. Belson (1986) has described in detail[19] other problems facing researchers seeking to construct valid and reliable questions, and argues that many of these pitfalls can be avoided by piloting the questions. Therefore, the draft schedule was piloted in February 1995 with a primary school headteacher.

**Piloting the interview schedule**

A major problem was encountered with the first pilot interview which led to a rethink of the overall research strategy. A means had to be found of reducing the likelihood of the informant providing the responses which he or she thought the researcher wanted to hear, rather than responding in a way that accurately reflects their own views. In order to reduce this kind of problem, particular stress was placed on this issue during the preliminary briefing with the headteachers of schools in which interviews would be conducted. The researcher emphasised the following points:

a. The confidential nature of all the interviews;

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[19] See Belson (1986) Chapter 2 pp 9-38

b. The fact that the data would be anonymised when eventually written up and consequently it would be very unlikely that any link could be made with the actual school.

The pilot interview increased awareness of another significant issue: because the focus was on beliefs about teaching, this could cause problems for those teachers who find the depth of questioning challenging to their sense of professional competence. Teaching is a blend of theory, experience and expedience. Much teaching is intuitive and frequently concerned with the mundane. It may be difficult for teachers to explain how their teaching relates to a long term goal, or on which particular piece of educational psychology their teaching strategies are based. This, in turn, may induce feelings of inadequacy and possibly hostility. In the first draft schedule, questions 2 and 3, which related to teacher and school goals, were partly constructed with this aim in mind. They were designed to give a comparatively easy lead in, and to help the informant adjust to the focus of the research. They were also designed with a quantitative aim in mind. However, the pilot interview suggested that these questions failed in this objective. The responses were virtually all positive. With the benefit of hindsight it is clear that the statements were very difficult to reject in terms of not being important priorities for any teacher or school. Clearly question 2 and 3 needed to elicit a stronger sense of priority. The statements themselves were also probably "leading" in the sense that they were not really uppermost in the informant's mind, but the request to rate them in terms of importance actually elevated their importance. Accordingly questions 2, 3, 4 and 5 (see Appendix 2) were revised as follows:

a. Question 2, which was designed to identify teacher perceptions of the main goals of the school, became open ended;

b. Question 3 sought to ascertain the degree of importance attached to the goals mentioned in question 2 by asking the informant to rank them in order of importance;

c. Question 4 became an open ended question designed to identify the informant's classroom goals;

d. Question 5 was an attempt to place the informant's classroom priorities in order of importance.

It was also felt that the quality of response would be enhanced if an indication was given in the introductory letter of the themes to be explored in the interview and the postal questionnaire (see Appendices 3 and 4). This would provide informants with an opportunity to marshal some of their thoughts before the interview.

The issue of context appeared to influence the response of one of the pilot informants. He was clearly upset by an outburst of HMCI who, the previous week, had criticised teaching methods used in some primary schools. This informant felt these criticisms had damaged staff morale. However, rather than asserting the validity of these teaching methods, the informant seemed unsure; he was no longer certain 'which way the wind was blowing.' Some responses were ambiguous. Two weeks earlier he may have answered some of the questions with more certainty. In trying to monitor the nature of change in primary schools, the researcher needed to be aware of context and the influence of certain external factors.

In addition to the changes to questions 2, 3, 4 and 5 outlined above, the first draft schedule was developed further and a second interview schedule produced (see Appendix 2). This was piloted with a primary school teacher who worked in a different school from the first interviewee. As a result of this pilot no major strategic changes were made to the schedule although the content of some of the questions was developed.[20] (see Appendix 5 for the final version of the schedule used in this research). The rationale for selecting the content of the questions used in the schedule is described in the next section.

**Constructing the questions: the content**

It was decided to use some of the correlates of effective teaching outlined in Chapter 2 as the basis for the questions used in the focused interviews and later in the

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[20] Three questions were replaced and six questions added so that reactions to the following topics could be explored: whole class didactic teaching (9.11); specific subject teaching (9.12, 10.17, 11.12); the use of mnemonics (9.13); pupil autonomy (6.8, 9.14; 10.18) and direct instruction (13).

postal questionnaire. Brophy and Good (1986), in their synopsis of research into teacher behaviour, identified a number of broad attributes that were consistently found to have made the greatest difference to the level of pupil achievement in primary grades 1 to 6. These attributes were particularly closely linked to enhanced pupil achievement in the basic skills, including reading. It therefore seemed a relevant set of attributes against which to explore the attitudes and belief of teachers in the sample schools, given that the criteria for effectiveness was promoting pupils' reading progress. However, a selection from the attributes outlined by Brophy and Good (1986) was made because some examples of individual teacher behaviour would be very difficult to disagree with. Few would disagree with the notion that: *"effective teachers are knowledgeable about their students"* or *" effective teachers are thoughtful and reflective."* Some of the correlates identified by Brophy and Good reflected American practice and it was hoped that the British primary teachers in the sample would find some of them slightly contentious. Using them in the interview and questionnaire schedules may provoke a strength of feeling which might make it easier to locate certain fundamental values and beliefs.

Much of the interview schedule was also built upon issues of strategy for which there is substantial empirical data and which has been explored in the literature review on teaching and learning (see Chapter 4, pp. 79-102). The pedagogical themes examined by the interview questions were as follows (see also Appendix 5):

- School goals;
- Classroom goals;
- Independent learning;
- Co-operative learning approaches;
- Higher order thinking skills;
- Differentiation;
- Discovery learning;
- An integrated curriculum;
- Whole-class instruction;
- Direct instruction;
- Homework;

- Testing and assessment.

In addition, the following aspects of school culture were investigated because both school effectiveness and school improvement research have linked them with pupil outcomes:

- The influence of progressive theorists such as Plowden and Piaget;
- The influence of headteachers;
- Acceptance of responsibility for pupil progress;
- Perceptions of the constraints on teacher effectiveness.

This research project used reading scores as a measure of overall effectiveness. As success on a reading test may reflect the priority given to reading, this issue was explored by questions that focused on the following two themes:

- The priority given to developing reading skills;
- The value of reading test results.

Question 1 on the interview schedule and question 9 on the questionnaire investigated the professional backgrounds and career profiles of the respondents. This data helped to explore the link between training, career background and the possible influence of theorists such as Plowden or Piaget. Respondents were also given space at the end of the questionnaire to add comments on any of the issues covered.

**Size of sample**

The conclusions drawn from the data are clearly influenced by the numbers of schools and teachers represented in the sample. Data was obtained from a total of 77 teachers who represented 32 junior, primary or first schools (see Table 6.1 below). It could be argued that such a database is hardly extensive. However, other major studies have had a similar if not smaller database: Bennett (1976) based his research into teaching styles on observations of 37 primary school teachers; Rutter et al. (1979) drew their conclusions from research in 12 ILEA secondary schools; Smith and Tomlinson

(1989) based their research in 18 mixed comprehensive schools. Brown (1994) argues that the future for school effectiveness research lies in small scale case studies that concentrate, in depth, on more or less effective schools. She describes research by Brown, Riddell and Duffield (1996) which is focused on just four schools in one Regional Education Authority and is looking at the progress of just 32 below average achievers.

**TABLE 6.1**

**The sample sizes used in this research project**

| | **Category** | **Respondents** | **Schools** |
|---|---|---|---|
| a | Sent a questionnaire | 96 | 32 |
| b | Completing a questionnaire | 62 | 27 |
| c | Interviewee | 15 | 5 |
| | **Total Sample** [b+c] | **77** | **32** |

Stringfield (1994a) argues strongly for the use of outlier studies in research into school effects yet by definition outliers are few in number. An outlier approach was used in this study which reduced the sample size even more (see Chapter 7, pp. 145-6). However, Stringfield (1994a) asserts the validity of conclusions drawn from outlier studies can be enhanced by stating from the outset the hypotheses which informs the study:

> *"The more observers posit explicit relationships among process and outcomes before going into the field, the more nearly standardized observations can become and the more rigour can be asserted into multiple teams' observations."* (p. 77)

The hypotheses in this research were made explicit from the outset and can be found in Chapter 1.

The 32 schools used in this study were members of a group of 42 that had volunteered to join an LEA pilot project which was set up in 1994 to explore the use of value added data as an aid to school improvement. The statistical measure of value added from the pilot project was used as the basis for determining the effectiveness and improvement paradigms used in this research. The annual value added residuals of the

32 schools were calculated from a larger sample of schools that grew during the three years of the project as Table 6.2 shows:

**TABLE 6.2**

**The number of primary schools in the Suffolk School Improvement Project, 1994-1996**

| Year | **1994** | **1995** | **1996** |
|---|---|---|---|
| Number of schools | 42 | 122 | 206 |
| Number of pupils | 1613 | 6560 | 6785 |

The statistical criteria used to determine effectiveness and improvement is thus based on a larger sample of schools and pupils and consequently lends significant strength to the conclusions reached in this research.

## The Suffolk School Improvement Project data

From 1986 onwards every pupil in Suffolk has sat the Suffolk Reading Test at ages 6+, 8+, 10+ and 12+. In September 1993, a Headteachers' Consultative Group was set up by the Chief Education Officer to help explore the potential of value added data based on pupil performance on the Suffolk Reading Test. It was decided to set up a pilot project to explore the use of this value added data as an aid to school improvement. During the Summer Term 1994, 42 primary schools volunteered to join the project and submitted the 6+ and 8+ Suffolk Reading Test results for their current Year 4. This data was subjected to a value added analysis using OLS[21] and the results, in the form of a value added chart based on residuals, were shared with each headteacher by a member of the Suffolk School Improvement Project during the Autumn Term 1994. The outcomes of each visit were recorded by the project team member on a pro forma, which was also used as part of the evidence base for this research project. Thirty-two of the original 42 schools who were members of the first year of the Suffolk School Improvement Project took part in my research. The 32 schools were selected for one of two reasons:

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[21] OLS, an acronym for the statistical technique of ordinary least squares regression analysis (see Appendix 14, p.319 for further details)

1. At least one teacher in the school completed and returned the questionnaire or
2. The headteacher was willing to allow me to interview them and two of their teachers.

**The five interview schools used in this research project**

It was decided to conduct interviews with the headteacher and two teachers from each of five schools located in a town in East Anglia. These schools were chosen because they were all urban 5-11 primary schools from the same town, therefore some of the contextual variables would be similar. This would possibly resolve the problem of urbanicity which Teddlie (1994) has demonstrated that can be a variable in school effects. All schools were members of the Suffolk School Improvement Project and shared a common interest in value added data analysis and school improvement. Their headteachers were also prepared to give up the substantial amount of time required to interview them and two of their members staff. Table 6.3 shows that as a group their mean value added residual for 1994 was not significantly different from the overall mean of all the Suffolk School Improvement Project schools. Contextually the five interview schools had a slightly higher FSM percentage but this was not statistically significant. As a group the interview schools were not atypical.

**TABLE 6.3**

**The 1994 residual and FSM data for all Suffolk School Improvement Project schools and the 'interview' schools.**

| **Category** | | **V.A. Residual** | | **FSM [%]** | |
|---|---|---|---|---|---|
| | ***n*** | ***mean*** | ***st. dev.*** | ***mean*** | ***st. dev.*** |
| 'Interview' schools | 5 | -0.53 | 2.23 | 30.78 | 15.67 |
| S.S.Imp. Project schools | 42 | 0.13 | 3.23 | 24.63 | 13.37 |

However, the most important criterion for choosing these five schools was their individual 1994 value added residual data. Table 6.4 below shows that their residuals ranged from -3.09 to + 3.08 and this suggested the five schools represented a wide

spectrum of effectiveness. Thus the interview data could act as exemplars of some of the issues raised by the quantitative data.

**TABLE 6.4**

**The 1994 value added residuals of the 'interview' schools**

| School | 1994 Value Added Residual |
|---|---|
| Lulwind | 3.08 |
| Chase | 0.18 |
| Mellstock | -0.17 |
| Hintcomb | -2.67 |
| Marlbury | -3.09 |

Ultimately the wisdom of this selection depended on the predictive power of the first year's results[22], since this research project was based on a definition that effectiveness could only be properly established after three years of data, rather than the one year's data that existed at the time the selection was made. The choice of schools was therefore based on the assumption that there would be a fair degree of stability in terms of effectiveness or ineffectiveness in at least some of the schools. Fortunately for this research, at the end of the three years the mean residual data for one of the five interview schools met the criteria for more effective outlier status, and two met the criteria for ineffective status.

It was also anticipated in 1994 that some of the interview schools' residual data would improve or decline significantly by 1996. This did not prove to be so. After three years, two of the schools met the 'declining' criteria but none of the interview schools met the 'improvement' criteria laid down in Model H (see Chapter 7, p158). Hence, it was not possible to test or examine in more detail the results of the quantitative analysis of the improving category of schools with qualitative data. Therefore, a greater reliance was placed upon other qualitative data available such as Ofsted reports. Again such data has limitations which are discussed later in this chapter (see pp. 130-1).

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[22] This contrasts with the approach of Gray et al. (1998) whose qualitative research instruments were employed retrospectively at the end of the five year period of improvement rather during the time when improvement was taking place (see Gray et al. 1998, pp. 11-12)

Interviews were conducted in each school during April and May 1995. At that time, each had access to the following data:

- Individual results for the 6+ and 8+ Reading tests that were published to schools during June 1994 along with school and county means; and

- The value added residual chart and individual pupil residuals given to each school by a member of the School Improvement Project team during October or November 1994. This data would have enabled the headteacher and staff to compare progress made by their pupils between 6+ and 8+ with the progress made by pupils in the 41 other primary schools in the School Improvement Project.

By the time of their interview, every headteacher in the research sample would have been aware of the effectiveness of their school in promoting reading progress, because the 1994 chart and residual data showed the position of their school in relation to the average of all 42 schools in the School Improvement Project (see Appendix 7, pp. 306-8, for an example of the chart and data given to each headteacher). In addition to a visit from an adviser or project field officer to discuss the significance of the data, nearly every headteacher attended a conference in January 1995 at which the School Improvement Project team disseminated some of the broader issues emerging from the data. Therefore, each of the five schools not only shared an interest in school improvement, the headteachers at least had been confronted by some of the specific issues facing their schools and others in the pilot project. This context clearly may have sharpened their responses and possibly reduced differences in views.

Value added data of the same nature relating to the performance of subsequent cohorts were collected and distributed during the Autumn Term of 1995 and 1996. However, this data was not available to the five schools at the time of the interviews in April and May 1995 and thus they had no firm evidence of improvement or decline in reading scores when the research took place. This later evidence may have precipitated changes in practice, particularly if there was significant evidence of decline. However, it is likely that the impact of any changes would not have been felt immediately and

therefore probably did not influence the 1996 residuals significantly. Evidence of decline would only have been available in October 1995 at the earliest. The 8+ cohort sat their reading test in March 1996 and therefore, a school faced with evidence of decline had only four months to improve levels of attainment significantly.

**The postal questionnaire**

The interview schedule and the responses of the interviewees were used to construct a postal questionnaire (Appendix 6, pp 295-305) sent to 32 other schools in the Suffolk School Improvement Project. The purpose of this questionnaire was to explore the issues raised in the interview schedule from a broader evidence base in order to determine whether the responses of the 15 interviewees were representative. Parts of the interview schedule were modified and many of the open-ended questions on the interview schedule were replaced with either scale items or multiple choice questions. Structured response items were used extensively in the questionnaire in order to encourage maximum participation. The questionnaire contained a total of 89 items which made considerable demands on the respondents in terms of time. Open ended questions would have added to those demands, and may have reduced the number of completed questionnaires. Cohen and Manion (1994) also point to another significant problem with open ended questions, the problem of coding unstructured responses.

The data from the responses of the 15 interviewees to interview questions 11.1 to 12.4 were used to create the scale or multiple choice questions 5.1 to 6.7 on the questionnaire. The scale items in questions 1 and 2 on the questionnaire were based on the responses to the open-ended questions 2, 3, 4 and 5 on the interview schedule. Questions 3 and 4 on the questionnaire were identical to questions 6 and 9 on the interview schedule. The questions on direct instruction were also the same. Links between the specific questions are shown in Table 6.5 below:

## TABLE 6.5

**The links between specific questions and the themes explored in the interview and questionnaire schedules.**

| Theme | Interview schedule | Postal Questionnaire |
|---|---|---|
| School goals | 6.1-6.13 | 1.1-1.13 |
| Classroom goals | 7.1- 7.13;10.7,10.20 | 2.1 - 2.13; 4.7, 4.20 |
| Independent learning | 6.8, 7.8, 9.14, 10.9, 10.14, 10.18, 11.9, 11.11 | 1.8, 2.8, 3.14, 4.9, 4.14, 4.18, 6.7 |
| Co-operative learning | 9.3, 10.13 | 3.3, 4.13 |
| Higher order thinking skills | 6.11, 7.11, 9.8, 9.13, 10.11 | 1.11, 2.11, 3.8, 3.13, 4.11 |
| Differentiation | 9.5, 9.10, 10.2, 10.8, 10.15 | 3.5, 3.10, 4.2, 4.8, 4.15 |
| Discovery learning | 9.2, 10.14 | 3.2, 4.14. |
| An integrated curriculum | 9.12, 10.17.11.12 | 3.12, 4.17, 6.6 |
| Whole-class instruction | 9.11, 10.4, 10.6 | 3.11, 4.4, 4.6 |
| Direct Instruction | 13.1-13.4 | 7.1-7.4 |
| Homework | 9.7 | 3.7 |
| Testing and assessment | 9.6, 10.5 | 3.6, 4.5 |
| The influence of theorists | 11.2;11.5 | 5.1,5.2 |
| The influence of headteachers | 11.3,11.5, 11.8, 11.10 | 5.2,5.3,6.1,6.2 |
| Acceptance of responsibilty for pupil progress | 11.3,11.9 | 5.3,6.3 |
| Perceptions of the constraints on teaching | 11.4,11.11 | 5.4,6.5 |
| The priority given to developing reading skills | 6.9,7.9 | 1.9,2.9 |
| The value of reading test results | 11.3,11.6 | 5.3, 6.4 |
| Strategies used to teach reading | | 8.1; 8.2; 8.3 |

As success on a reading test may well be a product of the specific strategies used to teach reading, questions 8.1 to 8.3 were added to the questionnaire to examine this issue. They had not been included on the interview schedule.

### The questionnaire schools

In June 1995, three questionnaires were sent to 32 of the 42 primary schools in the Suffolk School Improvement Project. Questionnaires were not sent to the five schools in which interviews had been conducted. A further five schools were omitted:

three because they were too small for their data to be of any statistical significance and two because they had acting headteachers and I did not wish to add to their burdens. A total of 62 of the 96 questionnaires were returned by the end of July 1995. This gave a return of 65 per cent although two were sent back not completed. Fourteen schools completed all three questionnaires; seven schools returned two; six schools returned one and five schools failed to return any. The questionnaire data represented the views of teachers drawn from a total of 27 schools (84% of the total sample used in this research). Table 6.6 compares the value added residuals of those schools that returned questionnaires with the ten schools which did not. There was no significant difference between the mean residuals and FSM of the two groups and so those schools that did not complete the questionnaires may not have been atypical in a contextual sense.

**TABLE 6.6**

**The 1994 residual and FSM data for schools which completed the questionnaire and those that did not.**

| **Category** | | **V.A. Residual** | | **FSM [%]** | |
|---|---|---|---|---|---|
| | ***n*** | ***mean*** | ***st. dev.*** | ***mean*** | ***st. dev.*** |
| Questionnaire schools | 27 | 0.29 | 3.34 | 22.71 | 13.39 |
| Non-questionnaire schools | 10 | 0.03 | 3.32 | 26.73 | 10.49 |

Nevertheless, the validity of the conclusions drawn from the data in this research must be tempered by the response rate to the questionnaire. It has to be pointed out that the responses of the 35% who did not return their questionnaires may well have changed the distribution of answers. As Belson (1986) points out, the issue of 'volunteer bias' is a fundamental weakness with postal questionnaires which, by its very nature, can only be resolved by reducing the number of non-respondents, and for reasons outlined above this was not feasible. An alternative would be to apply a corrective mechanism but, as Belson points out, there is no published research that could be used as a basis for a mechanism which could be applied to correct the problem of volunteer bias.

## The Ofsted reports

The 1992 Education (Schools) Act radically changed the system of school inspection and introduced a more regular and explicit form of inspection according to criteria outlined in the Framework for Inspection (1993; 1995). Ten of the 27 questionnaire schools and four of the five interview schools were inspected by Ofsted during the period May 1993 to March 1996 and their reports have been used as part of the evidence base for this research. These reports provide a useful additional source of evidence about the teaching of reading and English, although the validity of some conclusions reached by Ofsted inspectors have been questioned (see Mortimore and Goldstein 1996; Wilcox and Gray 1996). Unfortunately, there are certain methodological difficulties in drawing any firm conclusions from the reports used in this research project:

i. The reports vary markedly in content; some contain far more detail about the methods used to teach reading than others. This may in part reflect certain changes in the framework. Therefore, it may not be reasonable to conclude that schools whose reports contain scant detail about methodology were only using a narrow range of methods to teach reading.

ii. Evaluative comments are confined to judgements about standards observed at the time of the inspection and attainment data available. The value added data used to measure effectiveness and improvement in this study reflect attainment and progress over a four-year period and may represent evidence of past practice rather than that in evidence at the time of the inspection. This may partly explain the disparities between the conclusions reached in the inspection report and those drawn from the reading score data.

iii. Evaluative statements about the quality of teaching of reading do not exist in the inspection reports but appear to be subsumed within a more generalised view about the quality of teaching and learning in English. English in these reports also includes writing and speaking. However, as Barber (1997) points out, SCAA's analysis of the 1996 Key Stage 2 results shows that there

is a very close correlation (0.84) between pupil performance in the reading component of the test and English as a whole. This correlation may reflect the generalised impact of the quality of teaching on all three aspects of English. Riley (1994) has explained the interaction between the development of the skills of writing and those of reading in terms of generating overall literacy:

> *" Both processes contribute to literacy acquisition as they develop side by side and are the mirror image of each other."* (p. 136)

Riley (1994) also found that the ability of a child to write his or her name on entry to school was one of the strongest predictors of successful reading at the end of the first year in school (r= 0.57). It therefore seems legitimate to treat the Ofsted inspectors' comments on the teaching of English as a reasonable indicator of the ability of the school to teach those skills tested by the Suffolk Reading Test.

iv. Progress on the Suffolk Reading Test, which was the measure of effectiveness or improvement, reflected the quality of teaching and learning over a four year period. The 1994 residuals were based in part on performance in the 6+ test taken during Spring 1992; the 1996 residuals were based in part on the result of 8+ test that was taken in Spring 1996. The questionnaire and interview data represent a snapshot of values and beliefs held in the Summer Term 1995 by a total of 77 primary school teachers. These research instruments do not seek to measure changes in values, beliefs or practices over time, rather to examine the culture that existed at just after the mid point in the four year time frame of the reading tests. However, the Ofsted reports, which also represent a snapshot of practice and progress at a particular point in time during this four year period, are based largely on classroom observations. They may be reflecting the reality of practice rather than the rhetoric. They may also be reflecting changes in personnel or policies whose effects may not be manifested in Reading Test results until after the four-year time frame used in this research.

## Methodological issues

Hopkins (1995) argues that the present range of research methods used in school improvement research is very limited. Traditional methods, such as those used in this research - that is interviews and questionnaires - are not only cumbersome and time consuming, they may be unable to unearth the complexities of school culture. Stoll and Fink (1996) support this view and argue for mixed method approaches that incorporate case studies. Brown et al. (1996) state that in-depth case studies are necessary to complement large scale school effectiveness research so that the latter does not lose touch with the perspectives of those who actually make schools more effective, teachers in classrooms.

Unfortunately, the limitations of time and the difficulty of gaining access to the inner sanctums of schools are problematic particularly when schools are increasingly in the public gaze and subject to frequent scrutiny by bodies such as Ofsted. Schools are becoming more cautious and mistrustful, particularly those which may be the most fruitful focus for research. In designing the instruments used in this research, I was very aware of the sensitivities of headteachers, particularly those who had found their value added profile less than palatable. Traditional methods of questionnaire and interview were used because they were likely to enlist the greatest degree of co-operation simply because they were familiar to most teachers. As it was, the number of completed questionnaires was lower than anticipated; 35 per cent were not returned. Five schools, despite follow-up phone calls, failed to return a completed questionnaire. This did not appear to relate to disenchantment with the Suffolk School Improvement Project nor the quality of their 1994 residual. Most cited the pressure of a long term or other priorities. However, although I had no way of determining whether those who failed to return their questionnaires would have altered the overall distribution of responses, the analysis carried out and reported in Table 6.5 (see p. 129) suggests that they did not differ overall in terms of value added residuals or FSM.

This may also reflect a problem reported by Brown and McIntyre (1993) who highlight the demands which much research makes of teachers, not just in terms of time but also in terms of asking them to reveal their thinking. Some teachers in this research

project may well have felt that certain questions exposed weaknesses or inconsistencies in their thinking. However no-one was under any obligation to complete and return the questionnaire and this was made very clear in the letter that accompanied it (see Appendix 4). It is hoped that those who had any concerns took advantage of this option.

**The problem of authenticity**

Cooper and McIntyre (1994) indicate another problem facing researchers who use "traditional" methods:

> *"How can the researcher deal with the possibility that subjects might present merely plausible as opposed to authentic responses."* (p. 19)

I was acutely conscious of this problem during the interviews and took great pains to appear non-judgmental, encouraging and interested in what was being said. There is no evidence to suggest that responses given to the questions asked in this research were anything other than authentic. It is perhaps for others to analyse the content of the tape recordings made during the interviews to verify this claim. I was also aware of the difficulty in establishing the accuracy of the responses in those questionnaires that were completed. Cohen and Manion (1994) advise employing the *"intensive interview method"* (p100) as a means of determining the validity of responses. The original questionnaire was long and I was very concerned that a subsequent interview would exhaust the goodwill of respondents. Consequently no more approaches were made to respondents and the responses on the questionnaires were taken to be authentic.

A further problem in assessing the authenticity of questionnaire and interview data is the actual research frameworks themselves. Brown et al. (1996) believe that a fundamental problem facing researchers, such as myself, who are seeking to integrate qualitative data into the quantitative lies in the origin of the research framework used:

> *"The well-meaning efforts of school effectiveness studies to incorporate qualitative data collection to complement the quantitative are unlikely significantly to bridge the gap between school effectiveness and school improvement. Their basic problem is that they are still dependent on*

*researchers' frameworks (theoretical or political) and not on the practitioners' implicit theories about what they are trying to do."*
(p. 116)

This view ignores the fact that teachers tend to communicate through the medium of a professional language based on shared understandings. Part of the strength of school effectiveness research is that, on the whole, it uses concepts that are intelligible to most teachers. Nevertheless, the views of the informant may be shaped by the structure and form of the questions and possibly this may not reveal a true picture of how teachers actually think about their work. However, Cooper and McIntyre (1994) found in their study of teachers' professional craft knowledge, that teachers were able to describe this knowledge in abstract terms in relation to goals sought. This contrasts with the view of Shulman (1986) who argues that teachers' craft knowledge is closely related to case knowledge built up through experience. Perhaps a distinction needs drawing between, on one hand, craft knowledge that appears heavily rooted in context and those practical constraints which influence choice of teaching method, and, on the other, those underlying values and beliefs about effective teaching that are the bedrock of craft knowledge. While the exigencies of circumstance always force choices to be made, it is probable that choices are also influenced by an individual's pedagogical ideology. Cooper and McIntyre (1994) found that teachers were able to describe accurately what they believed happened in lessons, why they took certain actions and what they hoped to achieve. However, they were unable to recall that aspect of their decision making which led them to discard particular courses of action in preference to others. Nevertheless, they were able to explain in a convincing manner the virtues of their chosen strategies. Unearthing pedagogical beliefs may therefore be difficult but not impossible.

The problem of teacher recall was also experienced by McCallum et al. (1993) when they sought to gather data about teachers' attitudes to Teacher Assessment at Key Stage 1. The teachers were not able to describe their assessment practices in any kind of detail and so a sorting activity was developed for them based on extracts of quotations obtained in initial interviews. McCallum et al. (1993) selected sixteen quotes which teachers were asked to react to on a *"like me /not like me"* scale. This was then

followed up by an interview in which the teachers were asked to explain why they chose certain typologies. A similar but not identical process was employed in this research:

a. Two relatively open ended interviews were conducted with a junior school headteacher and a primary teacher to pilot the questions.

b. Their responses were then used to frame the interview schedule and the questionnaire.

c. A section on the advantages and disadvantages of a method of teaching known as direct instruction was added to elicit stronger reactions to some of the key issues explored elsewhere in the research.

**The language of pedagogical practice**

The success of the research instruments used in this project hinges on the interpretation of broad concepts that characterise different methods of teaching. For example, the use of terms such as 'group-work' can mean different things to different people. The questions have been framed, as far as possible, to be precise in their meaning. Nevertheless, it has to be acknowledged that there is still room for different interpretations to emerge and this clearly tempers firm conclusions. This may be particularly true in relation to question 7 which explored reactions to the method of teaching known as 'direct instruction.' This method originated in the United States (see Rosenshine 1987; Galton 1989 and Chapter 4 pp. 77-78). The descriptions of the eight elements of 'direct instruction' were probably new to most respondents and terms such as *"over learning"* may have evoked a variety of interpretations. However, the questions themselves were only finalised after piloting them with a headteacher and a primary teacher. This enabled the questions to be refined but also it ensured that the language keyed into the pedagogical conceptual code used by English primary teachers.

However, even when there is common agreement about what constitutes a pedagogical method there may still be problems linking this method with pupil outcomes. Reaching any firm conclusions about the efficacy of teaching styles has

proved difficult (Bennett 1988; Mortimore et al. 1988) since the styles themselves are often collections of behaviours and activities. This led Bennett (1988) to conclude:

> *"As such, the notion of teaching styles, in itself, cannot provide an adequate explanation of differences in pupil outcomes."* (p. 21)

**The subjectivity of the researcher**

No research is ever completely objective and no researcher approaches his or her research with a completely open mind. This research, its methods and the social reality which is being investigated have been heavily influenced by the knowledge base, concepts and theories developed by previous researchers in the field. This can be problematic when attempts are made to integrate the school improvement and school effectiveness paradigms as Gray et al. (1995c) point out.

> *"much of what we encountered bore out the old adage that the data one has tend to structure the way one sees the problems, and the way one sees the problems tends to structure the data one attempts to collect."* (p. 219)

Nevertheless, some form of prescription is unavoidable given the pressures of time and the need to make sense of the data. Open-ended questioning with complete neutrality on the part of the interviewer may have caused respondents to overlook some of their deeper seated beliefs and values. Subconscious recall can be helped by prompts such as structured questions.

This research is based on a set of assumptions about the relationship between teacher beliefs and effectiveness. These are made explicit from the outset (see Chapter 1). Moreover, although these assumptions guided the genesis of this research, the process of collecting and analysing the data to test these ideas was carried as objectively as possible.

**The issue of correlation and causality**

Kyriacou (1986) has pointed to the challenge facing the process-product method used in this research:

> *" such a research design cannot distinguish between those aspects of classroom processes which simply occur when effective teaching is in progress and those aspects which in themselves constitute the effective teaching."* (p. 19)

This research study sought to explore the link between culture and effectiveness and the statistical analysis was mainly correlational. Limited resources prevented the researcher from examining what Brown and McIntyre (1993) conceptualise as, *"the flow of influence."* Hargreaves, D. (1995) is pessimistic:

> *" No school or teacher culture can be shown to have a direct impact on student learning and achievement, and claims to that end are vacuous."* (p. 43)

However, this does not mean that culture and pupil achievement are unrelated; simply that research has yet to find a means of identifying in an unequivocal sense the direction of the linkage and the exact mechanisms that trigger these links. Therefore, the conclusions reached in this research will be inferential rather than empirically proven.

According to Gray et al. (1995c) correlational studies that use value added residuals and attempt to relate them to key factors in effectiveness need to bear in mind a further caveat:

> *"the so called key factors may only explain part of the variance between schools (rather than all of it) and consequently represent, at best, partial causes."* (p. 221)

Hargreaves, D. (1995) also comments that where culture is deemed to be a key factor in accounting for effectiveness, then conclusions drawn about its influence should be tentative at best:

> *"Research should test whether and in what ways school culture relates to a variety of outcome measures, especially cognitive ones, but not excluding the*

> *possibility that school culture might (*pace *Rutter and colleagues) be a variable irrelevant to some or all outcome measures. Linking school culture to variations in teacher values and practices is insufficient to throw light on school effectiveness."* (p. 39)

However, contemporary political and educational policy makers have a far more sanguine view, particularly in relation to the teaching of reading. Woodhead (1995) and Ofsted (1996) argue vigorously that a culture rooted in Plowden and Piaget is the prime cause of low reading standards in primary schools. The main aspiration behind this research project was to see if such a claim could be supported in relation to 32 Suffolk primary schools whose effectiveness in promoting pupils' reading progress appeared to vary during the period 1994 to 1996.

In the next chapter the analytical framework used to interrogate the data will be described and examined.

# CHAPTER 7

## Statistical Data Analysis

*"In my view, little of the true potential of school effectiveness research has yet been realised. Even the minimum requirements for valid inference are demanding ones."* Goldstein (1997b, pp. 393-4)

### Introduction

The purpose of this chapter is twofold:

1. To describe and examine the statistical measures used in this research to establish effectiveness and improvement.

2. To describe and examine the rationale that underpins the effectiveness and improvement outlier models that have been used to analyse both the qualitative and quantitative data gathered in this research.

### The value added residual approach to school effectiveness

The initial question confronting this data analysis centres upon the measure used to determine school effectiveness: individual pupil performance in the Suffolk Reading Test. Measures of school effectiveness were based on comparing pupil performance in two Suffolk Reading Tests taken by pupils during Year 2 when they were 6+, and in Year 4 when they were 8+. These tests are taken in the Spring Term of each academic year. A scatter plot of 6+ and 8+ scores was drawn. Using regression analysis, a line of best fit was then drawn for each school, and an overall line was drawn for all the primary schools in the School Improvement Project. A value added residual was calculated for each school by comparing individual pupil progress against the average progress of pupils of the same ability in all schools in the pilot project. Further details can be found in the paper sent to schools (see Appendix 8).

The rationale for this approach to measuring value added has been outlined by Gray (1993), Hutchinson (1993), NFER (1994) and Fitz-Gibbon (1992; 1996) among others. Significantly, Professor John Gray, a leading authority on SER, was the consultant to the Suffolk School Improvement Project from its inception in 1993 and was very influential in the choice of statistical measures.

The data for each school in this research has been collected over a three year period, between Spring Term 1994 and Spring Term 1996. The main issues raised by using this type of data as an indicator of school effectiveness are now described:

**The reliability of the Suffolk Reading Test at 6+ and 8+ as a measure of reading ability**

Turner (1993), in his review of reading tests, describes the Suffolk test as *"technically the best of the newer group of tests"* (p14). Hurry and Sylva (1997) reported that the Suffolk Reading Test was among the five most commonly used reading tests in primary schools, and that the high reliability of the test made it a valid measure of group or individual progress. The overall correlation between 6+ reading scores and those obtained at 8+ for the 1613 pupils in the 1994 Suffolk School Improvement Project was 0.81. In 1995, the overall correlation between 6+ reading scores and those obtained at 8+ for the 6560 pupils in the 1995 Project was 0.82. In 1996, the overall correlation between 6+ reading scores and those obtained at 8+ for the 6785 pupils in the 1996 Project was 0.88. Within each school in this study, the mean correlation between each year's 6+ and 8+ reading score data was 0.79. Cohen and Manion (1994) argue that correlations ranging from 0.65 to 0.85 are usually strong enough to make possible group predictions:

> *"Nearer the top of the range* [0.65 to 0.85], *group predictions can be made very accurately, usually predicting the proportion of successful candidates in selection within a very small margin of error."* (p. 140)

The correlations for 1994, 1995 and 1996, combined with the size of each sample, suggest that the Suffolk Reading Test is a valid basis upon which to evaluate progress made by pupils in reading between the ages of 6 and 8.

## The Suffolk Reading Test as a measure of school effectiveness

The Suffolk Reading Test may measure more than simply a pupil's ability to decode words and phrases. The correlations between scores obtained at 6+, 8+, 10+ and 12+, in both 1994 and 1995, are strong as Table 7.1 below indicates. Of equal significance is the correlation between 12+ Reading Test scores and best seven GCSE scores. In 1994 and 1995 the correlation was 0.68; in 1996 it was 0.7. In their study of GCSE results in 87 Lancashire schools, Thomas and Mortimore (1996) found that the verbal CAT test score had a greater impact in predicting overall GCSE attainment than the quantitative and non-verbal CAT test. This is evidence of the strong link between language skills and overall academic achievement. The strength of this link was also shown in the follow-up study of the Junior School Project data (Sammons1995) which found that reading was a good predictor of GCSE results at both 7+ and at age 11. Given the linguistic base of most subjects in the curriculum, this is perhaps not surprising. Thus it may be reasonable to assume that pupil progress at reading between 6+ and 8+ reflects a broader range of abilities and attitudes, many of which are influenced by the school. The value added residual may therefore measure more than just the effectiveness of a school at teaching reading.

**TABLE 7.1**

**Correlations between Suffolk Reading Tests, 1994 - 1996**

| | 1994 | | 1995 | | 1996 | |
|---|---|---|---|---|---|---|
| | *r* | *n* | *r* | *n* | *r* | *n* |
| **6+ / 8 + Reading Test** | 0.81 | 1613 | 0.82 | 6560 | 0.88 | 6785 |
| **8+ / 12 + Reading Test** | 0.82 | 993 | 0.83 | 2335 | 0.87 | 6318 |
| **12+ Reading Test / Best 7 GCSE** | 0.68 | 3798 | 0.68 | 5837 | 0.70 | 6550 |

The integrity of the reading scores depends upon the rigour with which the tests were administered. There was some evidence that the 1992 6+ reading scores of two schools, which were used to calculate the 1994 residual, were not wholly reliable due to the way the tests were conducted in the schools[23]. Consequently the guidance for administering the 1994 tests was revised. However, the impact of this revision would

[23] The effect in one school was to depress the residual; in the other the residual was inflated.

only be felt on the 1996 residuals. The residuals for 1994 and 1995 therefore may have been partially affected by the manner in which the tests were administered in some schools. Unfortunately, this factor was beyond the researcher's control and, therefore, it was not possible to assess the overall impact on residuals.

**The implications of using three years of Suffolk Reading Test data**

Gray et al. (1995) analysed British studies into the stability of school effectiveness at secondary school level and found they all reported reasonable to high levels of stability from year to year. However, Sammons et al. (1995a) point out that although measures of school effectiveness, such as total GCSE performance, may show a high level of stability over time, this may mask real differences between individual departments in the same secondary school. The same scenario may not necessarily exist in primary schools because pupils tend to be taught by one teacher for most subjects. Evidence from the Suffolk School Improvement Project and the 32 schools in this study suggests that the school effect may be less stable in primary schools than secondaries. Willms and Raudenbush (1989) suggest that teacher turnover can have more significant consequences for the stability of the school effect in primary schools. The fact that primary pupils tend to be taught by one teacher for most of the time means that a change of teacher could have a proportionately greater effect than in a secondary school.

Gray (1995b) argues that real estimates of school improvement can only be made by searching for trends over a period of time, and suggests that a trend requires at least three years' data. He points out that there are very few studies of school effectiveness which have had this volume of data available. Clearly the Suffolk Reading Test data used in this research meets this criterion although the instability in residuals has profound implications for data analysis. Gray et al. (1995c) suggest that correlations of 0.9 between two years' data is an indication of high levels of stability in effectiveness, whereas correlations of 0.5 or lower between two years' data indicate low levels of stability in effectiveness. Table 7.2 below shows that the mean correlation between the residual datasets was 0.44, and therefore overall the effectiveness of the primary schools in this study was not stable over time. This clearly has implications but it will be shown

that there were several schools whose residuals were comparatively stable over the three years, and it is these schools which provide a framework for examining the link between effectiveness and beliefs. This instability also reflects the fact that the residuals of certain schools were improving or declining relative to other schools, and it is these schools which provide the basis for examining links between improvement and beliefs.

**TABLE 7.2**

**Correlations between value added residual datasets of the schools in this study**

| | |
|---|---|
| Correlation between 1994 and 1995 Residuals | 0.39 |
| Correlation between 1995 and 1996 Residuals | 0.53 |
| Correlation between 1994 and 1996 Residuals | 0.41 |
| *Mean Correlation 1994 to 1996 (n=32)* | 0.44 |

Interestingly, the correlation between the 1995 and 1996 data was slightly stronger (0.53) than the correlation between the 1994 and 1995 data (0.39) which may suggest that residuals were becoming slightly more stable over time. This may also reflect the fact that the schools in the study were becoming more effective by comparison with other schools that joined the School Improvement Project in 1995 and 1996. Table 7.3 shows that the overall 1996 mean residual for the first phase of schools, the 42 in the 1994 cohort (0.35), was higher than the 1996 mean residual of the second phase, the 1995 cohort (-0.06), and higher again than the 1996 mean residual for the third cohort which joined in 1996 (-0.21).

**TABLE 7.3**

**A comparison of the 1996 mean residual of each phase of schools in the Suffolk School Improvement Project**

| **Phase of Schools** | **n** | **1996 mean residual** |
|---|---|---|
| Phase 1: 1994 Cohort | 42 | 0.35 |
| Phase 2: 1995 Cohort: | 122 | -0.06 |
| Phase 3: 1996 Cohort: | 206 | -0.21 |

## The criteria used to establish the categories for data analysis

The successful analysis of the possible links between the residual data and the questionnaire and interview data depended on the construction of categories of schools that share similar qualities. Merriam (1991) argues that categories should be internally homogenous, and externally their differences from other categories should be clear. Devising categories that were both homogenous and distinct from others was problematic because the data possessed two shortcomings:

(i) The numerical limitations of the data. Only 32 schools provided data for this research either through questionnaires or interviews. Devising too many discrete categories would weaken the basis of any conclusion because it was possible that only one or two schools would meet the criteria for that category.

(ii) The instability of the residuals over three years. Over half of the schools had relatively stable residuals and could therefore be regarded as either broadly effective or ineffective over time. Table 7.4 below, shows that nine schools achieved positive residuals in each year between 1994 and 1996; of these only three remained within the same standard deviation for the three years. Only eight achieved negative residuals in the same period of time and of these only three remained within the same standard deviation for the three years. Nearly half the primary schools appeared to change their level of effectiveness over three years which makes an interesting contrast to the findings of Gray et al. (1998) who reported that only one in four secondary schools changed their level of effectiveness over the five year period of their study.

**TABLE 7.4**

**The instability of residuals between 1994 and 1996**

| 1994 residual | 1995 residual | 1996 residual | no. of schools |
|---|---|---|---|
| positive | positive | positive | 9 (28%) |
| negative | negative | negative | 8 (25%) |
| negative | positive | positive | 4 (13%) |
| positive | negative | negative | 7 (22%) |
| negative | positive | negative | 3 (9%) |
| positive | positive | negative | 1 (3%) |
| | | **Total** | 32 |

Despite these constraints, the approach initially adopted was to identify "natural" groupings that emerged from the residual data.

**The search for analytical frameworks: the use of outlier groups**

The use of outliers as a framework of comparison has been a widely used method of research into school effectiveness and improvement. Stringfield (1994a) argues that the strength of outlier studies:

> *"lies in their ability to provide fine grained descriptions of school operations. The descriptions of contrasting cases can be both striking and convincing. Many of the most often cited findings from school effectiveness literature such as the importance of clear goals and active leadership, differences in classroom instruction and the importance of coordination of services, derive not from large scale studies but from replicating outlier studies."* (p. 82)

Stringfield (1994a) examined four types of outlier studies and concluded that those which contrasted positive and negative outliers possessed the greatest differentiating power. Unfortunately, the weakness of such a research design is that it causes the researcher to ignore data relating to the average schools which comprise the large bulk of the sample. However, contrasting an outlier group of schools with the "typical" or "average" schools can lead to dilution of differences. Despite this drawback, the use of positive and negative outliers does not necessarily mean that stark differences will emerge. The differences unearthed between the positive and negative outliers used in this research were neither extensive nor striking. Nevertheless, studies that contrast the most effective with the least effective may have more to offer policy makers who are seeking to eradicate failure from the education system. Outlier studies may provide examples of best practice, although it should be acknowledged that by definition outliers may be atypical and therefore their practice may not be easily integrated into average schools.

The next task facing the researcher was to find a valid means of identifying the outlier groups. Teddlie (1994) in his survey of SER reported that there were very large differences in the methods used to determine effectiveness and concluded that *"almost*

*every study defines effectiveness idiosyncratically."* (p. 93) Finding operational definitions for outlier groups was largely influenced by two factors:

(i) The need to ensure a reasonable, albeit small, number of schools in each outlier group. A group of two schools would hardly provide the kind of base from which to generalise any findings.

(ii) The statistical width of the residual differences between the schools.

Four models were considered.

**School Effectiveness Model A: The natural cut-off criterion**

I originally applied the term 'effective' to research schools whose 1994-6 mean value added residual was significantly above the mean residual for all the primary schools in the Suffolk School Improvement Project in 1994-6 (see Appendix 9). By placing the schools in rank order it was clear that there was a significant gap between the sixth and seventh schools (Sherton Abbas[24] +2.85 and Wellbridge +1.54). This produced a category of six schools which over a three year period had a residual of +2.85 or greater: High Stoy (+4.81), Knollsea (+4.33), Sandbourne (+4.17), Glaston (+4.07), Fountall (+3.22) and Sherton Abbas (+2.85). These schools were labelled *"Most Effective."*

Applying a similar strategy to those schools with a mean negative residual produced a significant gap between the 27th school in the rank order, Chalk Newton (-1.71), and the 28th, Marlbury (-3.03). This produced a category of five negative outlier schools which were labelled *"Least Effective"* : Marlbury (-3.03), Trantridge (-3.36), Anglebury (-3.4), Hintcomb (-3.54) and Casterbridge (-5.88). The remainder, 22 schools in all, fell within the range +1.54 to -1.71 of the mean and are identified in Appendix 9 as *"Average"*. Unfortunately, the number of respondents in both outlier groups was small: 12 in the *More Effective* group and 13 in the *Least Effective*.

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[24] Each school has been given a pseudonym that reflects the researcher's affection for the novels of Thomas Hardy.

## School Effectiveness Model B: the quartile method

The weakness of Model A appeared to lie in the relatively small size of both outlier groups: the *Most Effective* consisted of six schools whilst the *Least Effective* consisted of only five schools. Gray (1995b) used a model of effectiveness based upon dividing residual data into quartiles. He compared the upper quartile with the median and lower quartile to determine effectiveness over time, and labelled the upper quartile "effective" and the lower quartile "ineffective". Applying this method to my data produced eight schools in each of the upper and lower quartiles. However, the cut off points at the foot of each quartile seemed very small and in some ways less secure (see Appendix 10). For example the statistical difference between the residual of the school ranked at the bottom of the upper quartile, Blackmore (1.45), and the school at the top of the middle quartile, Budmouth(1.33), was only 0.12. Stourhead (-1.48), the school at the top of the lower quartile had a mean residual of only 0.1 less than the school above it, Melchester(-1.47).

## The issue of confidence limits

Sammons et al. (1993) and Goldstein and Thomas (1995) point out that it is often very difficult to identify with any degree of precision those schools that are doing well and those which are foundering. Value added residuals are simply too imprecise unless confidence intervals are applied to residual scores. Unfortunately, because of the incomplete nature of the data at the pupil level, multilevel methods had not been used for the Suffolk analysis and therefore this approach was not possible.[25] However, the standard error of the mean was calculated. Appendix 11 shows the standard error of the mean (SE) for each school in the two groups of outliers identified in Model A. The SE mean was calculated to 95 per cent confidence limits or 2 SE. There was very little overlap between the upper limits of the *Least Effective* outliers and the lower limit of the *Most Effective* outliers. The mean residuals of the schools in each group can therefore be seen to be fairly discrete and hence the categories appeared to be valid.

[25] Fitz-Gibbon (1996) argues that the differences between residuals calculated using a simple regression model and those using a multilevel model are negligible when the sample size is 30 or more. (see pp.128-133). Tymms (1997) also found that there were no differences in the standard errors of school residuals calculated using each method although for smaller schools they were slightly larger using ordinary least squares regression.

## The search for analytical frameworks: School Improvement Model C

The starting point for constructing the analytical frameworks of Models A and B was school effectiveness. However, the research also required a framework that measured school improvement which could be used to examine possible links with pedagogical culture. Model C was an attempt to build in school improvement descriptors into the school effectiveness criteria employed in Model A. Thus the concept *"improving"* was combined with *"effective"*, and the concept *"declining"* with *"ineffective"*. Defining *"improving and effective"* involved movements from a negative residual in 1994 to positive residuals in 1995 and 1996. *"Declining"* involved moving from a positive residual in 1994 to a negative residual in both 1995 and 1996. The remaining schools were divided into three remaining groups: those whose residuals were positive for the three years were labelled "*Stable and Effective*"; those whose residuals were negative for the three years, *"Stable and Ineffective"* and those schools that did not meet any of the criteria were labelled as *"Erratic"* (see Appendix 12). Table 7.5 below is a summary of the criteria used to identify the five categories of schools in Model C.

**TABLE 7.5**

**Model C definitions**

| Categories | Definitions | No. schools |
|---|---|---|
| Improving and Effective | 94 residual negative; 95 and 96 residuals positive | 4 |
| Stable and Effective | 94, 95 and 96 residuals positive | 9 |
| Stable and Ineffective | 94, 95 and 96 residuals negative | 8 |
| Declining and Ineffective | 94 residual positive; 95 and 96 residuals negative | 6 |
| Erratic | 94 residual negative; 95 residual positive; 96 residual negative. 94 residual positive; 95 residual negative; 96 residual positive. 94 and 95 residual positive; 96 residuals negative. | 5 |

Combining these definitions with those of *"effective"* and *"ineffective"*, made Model C a potentially useful analytical tool. The model produced a reasonable spread of

schools as Table 7.5 above demonstrates. However, the *Improving and Effective* category only contained four schools and hence the model was developed further, resulting in Model D.

## School Improvement: Model D

If the research questions were to be adequately explored, then more schools would have to fall within the effectiveness/improvement domains. This could only be achieved in the first instance by broadening the concept of *"improvement"* to include schools whose residuals were not only positive for each year but also increased every year. This added Sandbourne, Knollsea and High Stoy whose residuals increased every year from 1994 to 1996 (see Appendix 13). The *"declining"* category was broadened to include schools whose residuals had declined every year between 1994 and 1996, regardless of whether they were positive or negative. This added Hintcomb whose residual declined from -2.67 in 1994 to -4.72 in 1996 and Blackmore whose residual declined from 2.25 in 1994 to 0.54. Table 7.6 below is a summary of the criteria used to identify the five categories of schools in Model D.

**TABLE 7.6**

**Model D definitions**

| Categories | Definitions | No. Schools |
|---|---|---|
| Improving | 94 residual negative; 95 and 96 residuals positive. Residuals improving 94, 95, 96 | 7 |
| Declining | 94 residual positive; 95 and 96 residuals negative. Residuals declining 94, 95, 96 | 8 |
| Stable and Effective | 94, 95 and 96 residuals positive | 5 |
| Stable and Ineffective | 94, 95 and 96 residuals negative | 7 |
| Erratic | 94 residual negative; 95 residual positive; 96 residual negative. 94 residual positive; 95 residual negative; 96 residual positive. 94 and 95 residual positive; 96 residuals negative. | 5 |

Table 7.6 also shows that these categories increased the number of schools within the *improving /declining* categories.

## Controlling for contextual factors

The link between school effectiveness and contextual factors has already been examined elsewhere in this thesis (see Chapter 2, pp. 25-28). Sammons et al. (1993) and Sammons (1995) found significant socio-economic differences in reading progress even allowing for prior attainment during the junior years of education. Gray et al. (1995b) reported a correlation of 0.35 between pupils' social background characteristics and their individual GCSE results. Thomas and Mortimore's (1996) multilevel analysis of the 1993 GCSE results in Lancashire involved the employment of a wide range of pupil intake and school context variables. They concluded:

> *"it can be strongly argued that the most adequate model for measuring school effectiveness controls for the attainment of pupils on entry.....Employing additional background data (e.g. FSM) in the analysis has a small but significant impact on the school's results."* (p. 27)

Controlling for some of these background factors would help to locate the school effect and allow a fairer comparison to be made between schools. The following contextual factors were identified from the available data:

i. The percentage of pupils in each school eligible for free school meals;
ii. The percentage of boys and girls in each school who sat both the 6+ and 8+ Suffolk Reading Test;
iii. The distribution of ability in each school as measured by the Suffolk Reading Test.

## Contextual factors: free school meals

Sammons et al. (1993) used eligibility for free school meals (FSM) as an indicator of poverty in their reanalysis of the Junior School Project data and found that FSM had a significant negative effect on reading attainment. Hutchinson (1993) reported a negative correlation of -0.24 between FSM and reading progress between 6 and 8. The Scottish study of Sammons et al. (1998) reported a very strong relationship between eligibility for FSM and reading attainment at Year 4 and Year 6. This factor

was equally influential at secondary level (see Sammons et al.1995a; Thomas and Mortimore 1996). The variation in pupils eligible for free school meals varied considerably among the 32 research schools. The mean percentage of pupils eligible for free school meals over the period 1994-6 was 25.35 per cent, with a standard deviation of 15.37. This ranged from 1.9 per cent of pupils in Overcombe who were eligible for free school meals in 1996 to 68.8 per cent in Trantridge in 1995. It was therefore important to establish the correlation between FSM data and the reading test data and, if necessary, to allow for this in making any judgement about effectiveness.

**Contextual factors: gender**

The results from the 6+ and 8+ reading tests for 1994, 1995 and 1996 suggested that girls achieved higher mean scores than boys in Year 2 and in Year 4 (see Table 7.7 below). This trend was also supported by the results for the 1995 and 1996 Key Stage 2 assessments in Suffolk. Girls also outperformed boys in the National Curriculum assessments in English at the end of Key Stage 1.

**TABLE 7.7**

**The mean performance of boys and girls at 6+ and 8+ on the Suffolk Reading Test, 1994-6**

| **6 + Reading Test** | **1994** | **1995** | **1996** |
|---|---|---|---|
| Boys | 93.16 | 96.1 | 98.18 |
| Girls | 97.19 | 99.6 | 101 |
| **8 + Reading Test** | | | |
| Boys | 94.2 | 97.82 | 98.99 |
| Girls | 97.53 | 99.17 | 100.55 |

An analysis of the gender mix in each school was undertaken and revealed a wide variation. For the purposes of analysis, the percentage of boys in each school was calculated. The mean percentage of boys in the 32 schools over the period 1994-6 was 51.14 per cent with a standard deviation of 7.8 per cent. This ranged from 32 per cent of pupils in Casterbridge in 1995 to 71 per cent in Kings Hintock in 1994.

It could be argued that the residual of schools such as Kings Hintock were slightly distorted because of the greater preponderance of boys. However, the data for 1994 to 1996 suggest both boys and girls progressed at a similar rate between 6+ and 8+ although the mean difference in terms of attainment remained. This finding supports that of Sammons et al.(1993) who found that gender was not a significant factor in reading progress between Year 3 and Year 5 when prior attainment and other background factors were included in the multilevel model. Therefore, gender may not be a factor in value added terms between Year 2 and Year 4 because the residual measures progress rather than absolute attainment.[26]

**Contextual factors: ability composition**

There are certain statistical weaknesses with the single line of regression model that may impact on the value added residual. In particular it may be easier for a school with very low reading scores at 6+ to make more progress than a school with comparatively high reading scores at 6+. A pupil with a reading score of 70 at 6+ can theoretically improve his reading score by 60 points by 8+ because the maximum reading score that can be measured on the Suffolk Reading Test is 130. A pupil with a reading score of 125 at 6+ theoretically can only improve his or her reading score by a maximum of five points at 8+.

The spread of ability within a school may also distort the school effect in another way. Willms (1986) reported that the ability composition of a school can affect attainment. He found that pupils of average ability achieved more in schools where the mean ability of pupils was higher than average. The spread of ability within a school may therefore affect the value added residual. For the purpose of analysis, the percentage of pupils in each school with a reading score on or below the mean at 6+ was calculated. In 1994 the 6+ mean was 95.11, in 1995 it was 97.88 and in 1996 the 6+ mean had increased to 98.59. The mean percentage of pupils whose reading score was below the overall project mean in the 32 schools, over the period 1994-6, was 58.72 per

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[26] Interestingly Sammons et al. (1998) found that although there were no statistically significant gender differences in pupil performance at Y4, there were at the end of Y6 with girls making more progress at reading. This may be a critical starting point for future research into the origins of boys underachievement.

cent with an SD of 17.53 per cent. The range extended from 14 per cent of pupils in Kings Hintock in 1994 to 91 per cent in Melchester in 1996 whose reading score was below the mean. It would therefore be important to test statistically the relationship between ability composition and residuals.

## The correlations between contextual factors and pupil progress

In order to assess the relative influence of each of the three contextual factors used in the above analysis, the correlation coefficient using the formula for Pearson *r* was applied to individual school value added residuals. The following results were produced (see Table 7.8):

**TABLE 7.8**

**Correlations using Pearson *r* formula**

| | *r* (1994) | *r* (1995) | *r* (1996) |
|---|---|---|---|
| VA Residual / FSM | -0.28 | -0.34 | -0.38 |
| VA Residual / Ability | 0.06 | 0.06 | -0.16 |
| VA Residual / Gender | -0.19 | 0.01 | 0.19 |

It is clear that there is a weak but statistically significant negative correlation between Free School Meals and the value added residuals. Partial correlations were also calculated to determine the degree of correlation between the three contextual factors. Table 7.9 below shows there was a moderately strong correlation (0.53) between the free school meals data and the ability spread in a school. There were no significant correlations between the free school meals data and gender nor between the ability spread in a school and gender.

**TABLE 7.9**

**Correlations between three contextual factors**

| **Contextual Factors** | **r (1994 -1996)** |
|---|---|
| Free School Meals and Ability Spread | 0.53 |
| Free School Meals and Gender | -0.04 |
| Gender and Ability Spread | -0.04 |

## Adjusting the residuals to allow for contextual factors

In order to obtain a better estimate of the school effect, it was necessary to adjust the residuals of each school to take account of the contextual influence. Free school meals were the strongest contextual influence; using 1994-6 averaged values, r = -0.42 (see Appendix 16, p.321). Free school meals also correlated significantly with ability spread and so was chosen as a mechanism for adjusting the raw residuals. However, the FSM data consisted of overall school means based on the whole school population. Individual pupil level data was not available, and it is possible that the FSM school data does not accurately reflect the percentage of pupils who took the reading tests and who were also eligible for free school meals. Nevertheless, the FSM data for all schools appears fairly constant between 1994 and 1996 and therefore whole school data may be representative of the degree of deprivation that existed in the pupil cohorts used in this study. The absence of individual pupil data for FSM unfortunately precluded the application of a multilevel modelling analysis of the data. Instead, I used data obtained from an ordinary least squares regression analysis of the aggregate data based on the averaged values over three years for Free School Meals, and the average value added residual for the same period, to adjust the value added residual. Further details can be found in Appendices 14 - 17.

However, Paterson and Goldstein (1991) point that aggregate data are often remote from the educational process that is being studied and offer little by way of causal explanation. They argue: *"learning is done by children, not schools, or LEAs"* (p. 389). The aggregate data in this research project was used to establish a framework against which to examine individual teacher data of a quantitative and qualitative nature. The purpose of this study was not to examine the impact of teacher beliefs and values about teaching and learning on individual children (although this would make an interesting area for further research) rather on whole groups of children. The method chosen for analysis therefore appears to be appropriate given the limitations of the available data.

## The impact of adjusting the residuals

Appendix 18 shows the rank order of the schools once the overall means have been adjusted to take the FSM factor into account. It was clear that adjusting the means produced a different rank order. In all, 13 out of 32 schools changed their statistical relationship to the mean: nineteen schools remained within the same standard deviation; eight schools moved to a lower standard deviation while nine improved their standard deviation. There were two noticeable changes upwards: adjusting the mean residual for the FSM factor changed Mellstock's residual from -0.01 to an adjusted residual of 2.07 above the mean; Trantridge moved from an unadjusted residual of -3.36 to an adjusted residual of -0.69. An equally substantial reordering was reported by Sammons et al. (1993) when reading results were adjusted for prior attainment and other background factors including FSM. The findings in this research thus lends yet more weight to the view that publishing league tables of raw test results is an unjust and misleading way of representing effectiveness. It was also now obvious that the four models A to D, described earlier in this chapter, would have to be reappraised to take account of the adjusted residuals.

## School Effectiveness Model E: using the natural cut-off criterion

Appendix 19 shows the impact of grouping the schools according to the adjusted mean residuals. Applying the natural cut off criterion used in Model A, there appeared to be a natural break between Mellstock, whose mean residual was 2.07, and the school immediately below in the rank order, Chase, whose mean residual was 1.12. There was a similar natural cut off point at the foot of the rank order between Shaston (-2.05) and the school immediately above, Aldbrickham (-1.46). This produced eight positive outliers that were labelled *Most Effective* but only five negative outliers which could be labelled *Least Effective*. Significantly, four of the *Least Effective* schools and six of the *Most Effective* schools were in the same categories in Model A that used unadjusted means. Appendix 20 shows the impact of applying 95 per cent confidence bars to the two groups of outliers. There was very little overlap between the two groups which added to the validity of using these two groups as exemplars of effectiveness and ineffectiveness.

However, the credibility of any conclusions would be weakened by the comparatively small number of respondents represented in each group. The Most Effective outliers contained data from 16 respondents, three of whom had also been interviewed; the Least Effective outliers contained data from 13 respondents, six of whom had also been interviewed. The evidence base using Model E was therefore hardly extensive but reflected the problems of using an outlier approach. Outliers, by definition, are few in number.

**School Effectiveness Model F: the quartile method**

The membership of the upper and lower quartiles shown in Model B also changed when residuals were adjusted to take account of FSM. Interestingly, only six schools changed groups (see Appendix 21). The adjustment of residuals created a discrete upper quartile with a gap of 0.95 between the eighth school in the rank order, Mellstock (residual 2.07), and the ninth school, Chase (residual 1.12). Unfortunately, the gap between the lower quartile and the middle group was only 0.01 and hence the division between the groups seemed far less secure.

A further weakness of this model was revealed when confidence bars were applied to the upper and lower quartile groups (see Appendix 22). There were significant overlaps between the upper confidence limits of the four schools at the top of the lower quartile (Port Bredy: 1.05; Chalk Newton: 1.02; Aldbrickham: 1.36 and Shaston 0.87) and the lower confidence limit of the four schools at the bottom of the upper quartile (Mellstock: -0.67; Sherton Abbas -0.06; Wellbridge -0.07 and Fountall -0.11). This clearly undermined the notion of two discrete groupings although the number of respondents in each group was larger than model E. There were 16 respondents in the Upper Quartile and one interview school (Mellstock). There were 20 respondents in the Lower Quartile and two interview schools (Marlbury and Hintcomb). Despite these advantages, the quartile method did not seem a statistically secure way of distinguishing between groups of schools. Therefore, it was decided to use Model E rather than Model F as the analytical framework for school effectiveness.

## School Improvement Model G

Models C and D were attempts to devise analytical frameworks that would reflect school improvement. Table 7.10 shows the result of applying the same criteria outlined for Model C but using the mean residuals for 1994 - 6 which have been adjusted for FSM (see also Appendix 23). Combining these definitions with those of *"effective"* and *"ineffective"* produced an unbalanced spread of schools as Table 7.10 demonstrates; the *Improving and Effective* category only contained two schools, Bulbarrow and Marygreen. By contrast the erratic category contained nine schools. Hence the model was developed further.

**TABLE 7.10**

**School Improvement: Model G**

| Categories | Definitions | No. Schools |
|---|---|---|
| Improving and Effective | 94 residual negative; 95 and 96 residuals positive | 2 |
| Declining and Ineffective | 94 residual positive; 95 and 96 residuals negative | 6 |
| Stable and Effective | 94, 95 and 96 residuals positive | 7 |
| Stable and Ineffective | 94, 95 and 96 residuals negative | 8 |
| Erratic | 94 residual negative; 95 residual positive; 96 residual negative. 94 residual positive; 95 residual negative; 96 residual positive. 94 and 95 residual positive; 96 residuals negative. | 9 |

## School Improvement Model H

The use of adjusted residuals suggested that the criteria for improvement would have to be broadened. Model D criteria were applied to the adjusted residual data. This involved adding to the *Improving* category any school whose adjusted residual improved every year from 1994 to 1996 and to the *Declining* category schools whose adjusted residuals declined every year between 1994 and 1996. This added five schools to the *Improving* category and one school, Hintcomb, to the *Declining* category.

A further test was applied to measure improvement and decline: the difference between 1994 and 1996 residual. This removed Chalk Newton from the *Declining* category since the school appeared to be showing significant signs of improvement

(+3.33) between 1995 (residual - 4.00) and 1996 (residual -0.67) (see Appendix 24). These criteria produced a spread of schools in each category and increased the number of *Improving* schools to seven and maintained the number of *Declining* schools at six. Table 7.11 below is a summary of the criteria used to determine improvement or decline.

**TABLE 7.11**

**School Improvement: Model H**

| Categories | Definitions | No. Schools |
|---|---|---|
| Improving | 94 residual negative; 95 and 96 residuals positive or an increase in residuals between 1994 and 1996 | 7 |
| Declining | 94 residual positive; 95 and 96 residuals negative or significant decline in residual between 1994 and 1996 | 6 |
| Stable and Effective | 94, 95 and 96 residuals positive | 5 |
| Stable and Ineffective | 94, 95 and 96 residuals negative | 6 |
| Erratic | 94 residual negative; 95 residual positive; 96 residual negative. 94 residual positive; 95 residual negative; 96 residual positive. 94 and 95 residual positive; 96 residuals negative. 94 residual positive; 95 and 96 residuals negative but 96 showing a substantial improvement on 95 | 8 |

Model H is the analytical model of school improvement which was applied to the data. Although each category appears to contain an almost parallel number of schools this tends to obscure the true reality of the evidence base. The *"Improving"* category contained evidence from just 15 respondents none of whom had been interviewed, whereas the *"Declining"* category consisted of evidence from 16 respondents, six of whom had provided interview data.

## Conclusions

Adjusting the residuals to allow for contextual factors produced two frameworks, each of which contained two relatively statistically secure groups of outliers. Model E contained two discrete groups of outliers that represented both ends of the spectrum of effectiveness. Table 7.12 shows the two groups of effectiveness outliers. In total they represent 41 per cent of the schools used in this research.

**TABLE 7.12**

**The school effectiveness outliers**

| Effectiveness category | School | 1994-6 adjusted mean residual |
|---|---|---|
| Most Effective | Glaston | 4.49 |
| Most Effective | High Stoy | 4.14 |
| Most Effective | Sandbourne | 3.47 |
| Most Effective | Knollsea | 2.97 |
| Most Effective | Fountall | 2.79 |
| Most Effective | Wellbridge | 2.35 |
| Most Effective | Sherton Abbas | 2.14 |
| Most Effective | Mellstock | 2.07 |
| | | |
| Least Effective | Shaston | -2.05 |
| Least Effective | Marlbury | -3.00 |
| Least Effective | Anglebury | -3.16 |
| Least Effective | Hintcomb | -3.99 |
| Least Effective | Casterbridge | -5.16 |

Model H contained two discrete groups of outliers that represented both ends of the improvement spectrum. Table 7.13 shows the two groups of improvement outliers.

**TABLE 7.13**

**The school improvement outliers**

| Improvement category | School | 1994-6 adjusted mean residual gain/loss |
|---|---|---|
| Improving | Casterbridge | 6.9 |
| Improving | High Stoy | 6.52 |
| Improving | Marygreen | 6.28 |
| Improving | Idmouth | 4.12 |
| Improving | Bulbarrow | 3.88 |
| Improving | Sandbourne | 3.79 |
| Improving | Knollsea | 1.73 |
| | | |
| Declining | Hintcomb | -1.71 |
| Declining | Trantridge | -2.64 |
| Declining | Lulwind | -3.14 |
| Declining | Kings Hintock | -3.2 |
| Declining | Aldbrickham | -3.23 |
| Declining | Port Bredy | -3.7 |

Seven (22%) out of the 32 schools in the sample were placed in the "Improving" category[27]. It is these two models of "Effectiveness" and "Improvement" which were used to analyse the data upon which this research is built. Table 7.14 is a summary of the sample size of each outlier which, as has been pointed out, are not extensive.

**TABLE 7.14**

**The sample size of each outlier**

| Category | Respondents | Schools | Category | Respondents | Schools |
|---|---|---|---|---|---|
| Most Effective | 16 | 8 | Improving | 15 | 7 |
| Least Effective | 13 | 5 | Declining | 16 | 6 |
| **Total** | 29 | 13 | **Total** | 31 | 13 |

It is important to emphasise at this juncture, that the terms "More Effective" or "Improving" are relative to the sample used. All the schools may be effective in a sense and, if compared with a much larger national sample, may indeed proved to be so. As Goldstein (1997b) remarks:

> *"it is perfectly possible for all schools to be performing satisfactorily in some absolute sense while still exhibiting differences. The use of descriptions 'effective' and 'ineffective' therefore may be quite misleading unless this is understood and it would be more accurate to qualify such descriptions by the term 'relative' whenever they are used."*
> (p. 372)

The next chapter focuses on the relationships between the effectiveness and improvement categories and the process data obtained by questionnaires and interviews.

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[27] This is more than Gray et al.(1996) found in their study of 34 secondary schools when they reported that only one in seven schools (14%) improved rapidly over five years. This difference may partly reflect the different criteria used to determine effectiveness. Gray et al.(1996) used aggregate GCSE results; my study used performance at reading. It may be easier to improve in one subject in the curriculum rather than in a number.

# CHAPTER 8

## Data Analysis and Results: School Effectiveness

*"We have begun to adopt the canon of "disciplined subjectivity" in place of the myth of "scientific objectivity."* Clark (1986, p. 13)

### Correlations between school responses and pupil outcomes using data from the whole sample

The responses of all the sample schools to the scale items in the questionnaire were examined to determine their relationship with school effectiveness. The measure of effectiveness was the value added residual adjusted for the free school meals factor (see Chapter 7, pp. 154-156). The average scaled response for each of the 32 schools was plotted against its residual, and a correlation coefficient using Pearson's product-moment was calculated for each of the 60 scale items tested (see Appendices 25 and 26). Table 8.1 shows that three statements produced statistically significant correlations with effectiveness at the 0.05% level (using a one-tailed test).

**TABLE 8.1**

**Statements which correlated positively with effectiveness**

| Qu. | Statement *(n=67)* | r | Sig. |
|---|---|---|---|
| 3.11 | Children learn best when taught didactically as part of a whole class | -0.37 | 0.05 |
| 1.9 | Ensuring each pupil develops their reading skills to the full [school goal] | -0.31 | 0.05 |
| 4.18 | Teaching is most effective when pupils are given the freedom to choose which topics to study | -0.30 | 0.05 |
| 1.6 | Making learning enjoyable [school goal] | -0.25 | NS |
| 2.9 | Ensuring each pupil develops their reading skills to the full [classroom goal] | -0.23 | NS |
| 3.6 | Children learn best when they are regularly tested | -0.23 | NS |
| 3.1 | Children learn best when mnemonics are used | -0.23 | NS |
| 1.3 | Ensuring each pupil acquires as much mathematical understanding as possible | -0.22 | NS |

NB: correlations are negative because numerically the rating scale used is the inverse of the scale used to measure effectiveness. The most positive rating point =1 (strongly agree), least positive = 5 (strongly disagree); the higher numerically the residual difference the greater the degree of effectiveness. Positive values for r indicate correlation with negative residuals.

A further five statements suggested a correlation with effectiveness but were not statistically significant. None of the coefficients appeared strong enough to enable predictions to be made but they suggested an association between certain teacher attitudes and school effectiveness.

Of greatest statistical significance appears to be the link between the attitude towards didactic whole class teaching and effectiveness. The more effective the school, the greater the conviction that children learn best when taught didactically as part of a whole class lesson. The correlational data also suggested that the more effective the school, the greater the importance the school was perceived to attach to certain academic goals, particularly the development of reading skills at both the classroom and school level and, to a lesser extent, ensuring each pupil acquires as much mathematical understanding as possible. The findings suggest that attitudinal differences may reflect a stronger academic culture in the more effective schools, a view supported by the apparently greater commitment in these schools to the value of testing and the use of mnemonics as aids to learning. However, this emphasis does not appear to be at the expense of making learning enjoyable, nor of a commitment to giving pupils some freedom of choice over what they study. The stronger the commitment to both at a school level, the greater the effectiveness. This should serve as a timely reminder that an academic culture does not preclude making learning enjoyable nor does it mean a commitment to a curriculum which denies learners any freedom of choice. This conclusion supports the findings of Mortimore et al. (1988) who reported a positive link between pupil independence and cognitive outcomes where this took place within a clearly structured framework and over a fairly short period of time such as a lesson.

Table 8.2 below shows that two statements produced statistically significant, though fairly weak, inverse correlations at the 0.05% level with the measures of school effectiveness in reading.[28]

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[28] See note under Table 8.1. Positive values for r indicate correlations with negative residuals.

## TABLE 8.2

### Statements which correlated inversely with effectiveness

| Qu. | Statement *(n=67)* | r | Sig. |
|---|---|---|---|
| 3.8 | Children learn best when provided with work which is demanding | 0.36 | 0.05 |
| 2.1 | Making learning challenging (classroom goal) | 0.30 | 0.05 |
| 4.7 | Teaching is most effective when pupils have a clear idea of the objectives of the lesson | 0.25 | NS |
| 2.2 | Ensuring each pupil reaches the highest Nat Curric. Attainment Level (classroom goal) | 0.24 | NS |

Perhaps surprisingly, the respondents in the less effective schools believed more strongly that children learnt best when they were set work which was demanding, and that a goal of each classroom should be to make learning challenging. This appears to undermine the notion that a less rigorous culture was operating in these schools. There was no statistically significant link between a commitment to making pupils aware of lesson objectives and effectiveness. Similarly, a commitment to ensuring that every pupil reached the highest attainment level was not significantly stronger in the more effective schools. The items which produced significant correlations suggest that the key to effectiveness may not lie solely in the realm of goals but also in the strategies chosen to realise them.

The weakness of correlational research is that it can only point to associations and possible linkages and not causal relationships. For example, it could be argued that greater effectiveness in promoting reading may itself affect the school's culture and thus teacher attitudes. In order to explore further some of the issues raised by the correlational enquiry, the data was examined from another perspective which involved comparing the results of two groups of outlier schools.

**Comparing outliers: testing the significance of the two sample means**

The problems of identifying appropriate categories which reflect the concept of effectiveness and the concept of improvement have been explored in Chapter 7. The purpose of this section is to apply the school effectiveness outlier model developed in Chapter 7, Model E, to the questionnaire, interview and Ofsted data, in order to explore

possible links between each outlier group of schools and certain values and beliefs. The Model E framework was used to compare the mean responses of the Most Effective group against the group of Least Effective schools. A test of statistical significance using the Mann-Whitney U test was applied to the mean responses to each question. This non parametric test was chosen in preference to a Student t test. Startup and Whittaker (1982) state:

> *"non parametric or distribution-free tests"* are so described *"because they do not require the population distributions to be normal, nor indeed to take any other specifiable form. By contrast the t-test for small samples is based on that kind of assumption and belongs to the category of parametric tests."* (p. 112)

For a Student t test to be valid, the data in both samples must be normally distributed and have similar variances. The results of most of the scale items did not meet either of these requirements. The main requirement of the Mann-Whitney U test is that the scores need to be of ordinal status (see Clegg 1990 p. 164).

Only three statements produced responses that were statistically significantly different at the 0.05% level on the Mann - Whitney U test. Table 8.3 is a summary of the three statements which appear to support some of the conclusions reached previously by the correlational analysis.

**TABLE 8.3**

**Statements which showed statistically significant differences in mean responses**

| qu | Statement *(n=67)* | Most Effective | Least Effective | Difference | Mean all schools | MW Test |
|---|---|---|---|---|---|---|
| 1.5 | Ensuring each pupil acquires as much knowledge as possible | 1.44 | 2.27 | -0.83 | 1.65 | **Sig. 0.05, 2 tail** |
| 3.11 | Children learn best when taught didactically as part of a whole class lesson | 2.56 | 3.23 | -0.67 | 2.93 | **Sig. 0.05, 2 tail** |
| 3.1 | Children learn best by doing rather than listening | 2.19 | 1.73 | 0.46 | 1.9 | **Sig. 0.05, 2 tail** |

Teachers in the Most Effective group believed significantly more strongly in the value of whole class didactic teaching than those in the Least Effective group. The latter had a significantly higher regard for the principle that children learn more by doing than listening. The difference in academic culture was also evident in the greater importance given by the Most Effective schools to the whole school goal of ensuring pupils acquire as much knowledge as possible.

**Comparing outliers: examining distribution frequencies**

In total, the Pearson and Mann Whitney Tests identified statistically significant differences in 13 per cent (8 out of 60) of the items, which is more than would be expected by chance (5%). The usefulness of any statistical test is often influenced by both the size of the sample and the ability of an item to evoke a range of responses. The respondents were asked to indicate their agreement or disagreement on a five-point scale; yet the largest difference in mean responses was only 0.83 which is less than the difference between two points on the rating scale (see Appendix 27 for all the response differences). The questions and ordinal scaling used in this study may have lacked the sensitivity to draw out any further statistically significant differences in values and beliefs. This kind of problem is not unique to this research. Scale items hinge on semantics. Belson (1986) has researched the reliability of differential scale items using a double interview technique. He found that 60 per cent of respondents who used the centre point of the scale did not record their true strength of feeling and should have used a different point on the scale.

This may also reflect another weakness in the evidence base: the small number of respondents in each category. The Most Effective outliers contained data from 16 respondents, three of whom had also been interviewed; the Least Effective outliers contained data from 13 respondents, six of whom had also been interviewed. The evidence base for Model E was therefore limited.

Differences in responses to other items do exist, yet the use of mean scores as a basis of comparison may mask differences in the distribution of responses within each group. Exploring other potential differences involved comparisons of the frequency

distribution of each group's response to the remaining questionnaire items and subjecting them to a chi square test of significance. Table 8.4 is a summary of those statements which produced interesting differences in terms of agreement. The figures are shown in percentage form in order to compensate for the difference in size between the two groups. By virtue of their outlier status, the groups themselves are relatively small and this tends to inflate the size of the difference between them when the scores are converted into percentages. Although of limited significance in a statistical sense, the differences unearthed should be viewed as ones of slight emphasis rather than fundamental divergence. On their own these differences are marginal at best, but collectively they tend to lend some weight to the inferences already established.

**TABLE 8. 4**

**Statements which showed frequency differences**

| Qu. | Statement (n=67) | Most Effective [%] *(n=16)* | Least Effective [%] *(n=13)* | **Diff [%]** | Chi sq. (0.1 test = 2.71) |
|---|---|---|---|---|---|
| 3.2 | Children learn best through learning by discovery | 62 | 85 | **-23** | *NS (1.98)* |
| 3.7 | Children learn best when they receive regular homework. | 14 | 39 | **-25** | *NS (-2.49)* |
| 3.12 | Children learn best when taught specific subjects rather than an integrated curriculum | 31 | nil | **31** | **Sig. at 0.05** |
| 3.13 | Children learn best when mnemonics are used | 50 | 31 | **19** | *NS (1.98)* |
| 3.6 | Children learn best when they are regularly tested | 31 | 8 | **23** | **Sig. at 0.1** |
| 4.5 | Teaching is most effective when pupils are regularly tested | 38 | 15 | **23** | *NS (2.28)* |
| 2.7 | Preparing each pupil for the demands of secondary education [classroom goal] | 81 | 55 | **26** | *NS (2.32)* |
| 1.4 | Ensuring that each pupil uses their spare time constructively [school goal] | 50 | 24 | **26** | *NS (2.39)* |

This data supports the conclusion that slightly different pedagogical cultures existed in the two groups of outliers. The support for regular testing and specific subject teaching appeared stronger in the Most Effective schools. The use of mnemonics received more support in the Most Effective schools which is not surprising given their stronger commitment to ensuring pupils acquired as much knowledge as

possible. The school goal of preparing pupils for secondary education also appeared to be a greater priority among the Most Effective schools.

By contrast, the Least Effective were more in favour of learning by discovery. Interestingly, greater value was placed on regular homework in the Least Effective schools which supports the earlier conclusion that these schools were just as demanding of their pupils and more so in certain areas. However, as none of these differences were statistically significant, they must be viewed as tentative.

In terms of both pedagogical goals and practice, the similarities between the two groups appear far greater than the differences. Statistically significant differences in beliefs occurred in only nine out of 60 (15%) of the items in the first four questions on the interview and questionnaire. It should be noted that this is a higher proportion than would be expected to arise by chance (i.e. 5 %). A possible 11 further differences in emphasis have been identified but not statistically proven. In total only a third of items revealed differences of any sort, the remaining two thirds reflecting a strong degree of convergence. It is therefore clear that wide ranging differences between the goals and practices of headteachers and teachers in Least Effective schools and those in Most Effective schools do not exist. Therefore, the explanations and solutions proffered by Woodhead (1996) and Ofsted (1995a;1996) concerning less effective schools may appear a trifle simplistic in the light of this conclusion.

The proximity in perspective of the 32 schools in this research may stem from the fact that they were all interested in value added issues and quite probably in school improvement. Their willingness to participate in the first phase of the Suffolk School Improvement Project and their willingness to participate in this research suggests that the headteachers in those schools were at the very least interested in evaluating and monitoring their school's performance in the teaching of reading. It is therefore not surprising that great differences in pedagogical perspectives or cultures did not emerge.

However, clear differences in effectiveness have been established. It may well be the case that the volume of differences is not the crucial factor in explaining effectiveness rather the nature of these differences. A difference in attitude to didactic

teaching, regular testing and single subject teaching may well be more critical in terms of influencing pupil outcomes than a commitment to ensuring pupils use their spare time constructively. Equally a commitment to provide demanding work was not associated with effectiveness which suggests that strategy may be more significant in promoting effectiveness than aspiration. The next section explores in more detail the differences in goals and their links with effectiveness.

**A summary of the links between pedagogical goals and effectiveness**

The statistical analysis suggested that the following school goals were significantly associated with greater effectiveness:

- Ensuring each pupil develops their reading skills to the full [Pearson]
- Ensuring each pupil acquires as much knowledge as possible [Mann Whitney]

In addition, greater effectiveness appeared linked, although not in a statistically significant way, to the following goals:

- Ensuring each pupil acquires as much mathematical understanding as possible [school goal]
- Preparing each pupil for the demands of secondary education [classroom goal]
- Making learning enjoyable [school goal]
- Ensuring that each pupil uses their spare time constructively [school goal]

Ineffectiveness was linked in a statistically significant way to the following classroom goal:

- Making learning challenging [Pearson]

In addition, ineffectiveness appeared linked, although not in a statistically significant way, to:

- Ensuring each pupil reaches the highest National Curriculum Attainment level [classroom goal]

The data also suggested three further differences between the outlier groups:

(i) Breadth of goals

The Most Effective schools appeared to embrace a slightly broader holistic conception of their goals; although support was stronger for the development of basic skills, it was also greater for functions that some would argue are at the margins of a school's responsibility. There was more commitment to ensuring that each pupil uses their spare time constructively. This broader perspective for the well being of the whole child may explain why there was also a stronger commitment to preparing pupils for secondary education in the Most Effective schools.

(ii) Greater homogeneity between school and classroom goals

There appeared to be a slightly greater degree of consistency between the importance given to school goals and classroom goals in the Most Effective schools. Table 8.5 shows that the mean difference between school and classroom goals in the Least Effective schools was four times greater than in the Most Effective schools. This suggests that school goals had more impact on classrooms in the Most Effective schools.

## TABLE 8.5

### A comparison between the importance attached to school and classroom goals

| Qu. | Statement | Most Effective | | | Least Effective | | |
|---|---|---|---|---|---|---|---|
| | | school goal | class goal | diff. | school goal | class goal | diff. |
| 1.1 | Fostering a pupil's spiritual development | 2.19 | 2.25 | 0.06 | 2 | 2.27 | 0.27 |
| 1.2 | Ensuring each pupil reaches highest NC Attainment Targets | 1.19 | 1.25 | 0.06 | 1.31 | 1.18 | 0.13 |
| 1.3 | Ensuring each pupil acquires as much maths understanding | 1.19 | 1.13 | 0.06 | 1.46 | 1.36 | 0.1 |
| 1.4 | Ensuring that each pupil uses their spare time constructively | 2.44 | 2.5 | 0.06 | 2.92 | 2.73 | 0.19 |
| 1.5 | Ensuring each pupil acquires as much knowledge as possible | 1.44 | 1.44 | 0 | 2.27 | 1.64 | 0.63 |
| 1.6 | Making learning enjoyable | 1.19 | 1.13 | 0.06 | 1.31 | 1.18 | 0.13 |
| 1.7 | Preparing each pupil for the demands of secondary education | 1.72 | 2 | 0.28 | 1.77 | 2.36 | 0.59 |
| 1.8 | Ensuring each pupil becomes independent learner | 1.06 | 1.06 | 0 | 1.69 | 1.18 | 0.51 |
| 1.9 | Ensuring each pupil develops their reading skills fully | 1 | 1 | 0 | 1.08 | 1.09 | 0.01 |
| 1.10 | Ensuring pupils have a healthy and balanced diet | 2 | 2.06 | 0.06 | 2.4 | 2.36 | 0.04 |
| 1.11 | Making learning challenging | 1.31 | 1.25 | 0.06 | 1.46 | 1.18 | 0.28 |
| 1.12 | Ensuring pupils are happy | 1.19 | 1.25 | 0.06 | 1.23 | 1.18 | 0.05 |
| 1.13 | Ensuring each pupils' writing skills are fully developed | 1.13 | 1.19 | 0.06 | 1.08 | 1.27 | 0.19 |
| | Total | 19.05 | 19.51 | 0.82 | 21.98 | 20.98 | 3.12 |
| | **Mean** | **1.47** | **1.5** | **0.06** | **1.69** | **1.61** | **0.24** |

The Most Effective schools may therefore have been more tightly linked in a cultural sense. Teacher 1 Marlbury (Least Effective) illustrated the lack of continuity between the view of the school and the aspirations of a class teacher:

> *"As a class teacher you feel this onus on you to get the children as high as possible. I think perhaps the school has, although they want this child to do as well as possible, I wouldn't say it was something that they would desperately go out and about to do. I don't think the league tables and everything are a huge influence on the school. If we were slightly below average or slightly above average, it wouldn't influence us as much, whereas as a class teacher, as an individual, and I was told that my class were performing at a lower standard than the other two classes that are parallel, or that the school down the road, then I would, as a class teacher feel very bad that I'd let my children down, that I hadn't perhaps done my best for them."*

Teacher 1 in Hintcomb (Least Effective) referred to the lack of homogeneity in her school in attitudes towards National Curriculum attainment targets:

> *"I still think it is very important the pupils always achieve the highest level that they possibly can. I still feel there are some people who question some things in the National Curriculum on the staff here, and don't get me wrong, they don't question it much - but who would not put it as high as I do."*

Interestingly, a commitment to ensuring pupils acquire as much knowledge as possible was associated with effectiveness (see p. 168). Teacher 1 in Hintcomb possibly illustrated the significance of a lack of homogeneity between the aspirations of a class teacher in a Least Effective school and those of her colleagues when she also reported differences in attitudes towards the importance of knowledge:

> *"I just love knowledge, I just want the best for every child that a teacher can give them but, I still feel that there are some things that we're asked to do, and do do, that some of the staff will say -well that doesn't matter; it's not that important, but whereas I think the more you can cram into their brains, the more you should."*

Teacher 1 at Marlbury (Least Effective) reported a similar diversity of practice over differentiation:

> *"I think probably within the school I'm one of the teachers who's most aware of the fact that although it's supposedly a rough area, or a hard area, that it's important that you do actually recognise that there are children of each extreme, and, I think as a school although people recognise the fact that in their classroom they've got a variety of children, they don't necessarily teach to that variety. Every teacher would say: "Yes, I've got some who are better than others, or some that are worse than others", but I think, I'm one of the teachers who try and actually plan for that within the planning."*

(iii) <u>A difference in emphasis between social and academic goals</u>

The interview data also suggested a difference of perspective in the priority given to the social goals of the school compared to the academic. The six staff in the two Least Effective schools, Hintcomb and Marlbury, saw their school's objectives primarily in terms of the development of certain social attributes such as independence.

Certain social objectives seemed to take priority over the academic as the response of Teacher 1 at Hintcomb (Least Effective) illustrates:

> *"Everything is for the children here, the children come first. We're trying to achieve independent learners, I think to make the children proud of their own work and to achieve high results. We're very, very strong on independence, that the children should know what they are doing, where to get it, and to make their own decisions."*

Teacher 1 at Marlbury (Least Effective) emphasised the importance of developing certain social values:

> *"I think that we are trying to develop them socially, so that they can fit into society. I think we are trying to develop their language in particular. I think we are trying to give them the values, perhaps unofficially that we've got, of our own values, and perhaps, change their upbringing in a positive sense."*

By contrast, the three staff at Mellstock (Most Effective) did not eschew the social purposes of their school but their stronger sense of academic focus meant their social goals were different, and inextricably linked to the priority given to the academic. The values of hard work, high self esteem, positive self image figured largely in the social vocabulary of Mellstock. Teacher 1 described this link between academic achievement and social objectives thus:

> *"Well I believe that in our school the aim of the school is to make the pupils literate, numerate, to have high self esteem, positive self image, to leave school with as high a standard as possible that they are themselves able to achieve. So, basically that we stretch their full potential."*

This difference of emphasis was evident when they were asked to describe their classroom priorities. Teachers in the Least Effective two schools spoke of sustaining a happy atmosphere (T1[29] Hintcomb, T2 Marlbury), valuing pupils' opinions (T2 Hintcomb, T2 Marlbury) and developing an awareness of others (T1 Marlbury). Academic objectives were valued for their social outcomes, primarily those associated with enjoyment. The headteacher of Hintcomb (Least Effective) saw the aim of her singing lessons simply to be:

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[29] T1 shorthand for Teacher 1

*"Just the experience and enjoyment of singing, learning, getting to know a variety of songs, and just a little flavour of what the background of the songs is."*

By contrast, Teacher 1 at Mellstock (Most Effective), commented:

*"Well, I have high expectations, so I expect the children to work as hard as they can. I expect the children to be able to work at a certain pace, according to what I term to be their abilities."*

These differences in the content of social objectives may reflect the different social conditions that prevailed within the three 'interview' schools. Thomas and Mortimore (1996) suggest that the impact of overall levels of disadvantage, as measured by FSM, may operate through significant differences in teacher expectations. However, the evidence of this research project suggests that the impact of social disadvantage is neither uniform nor automatic, and it may depend upon the school's ability to sustain the environmental conditions appropriate for effective learning. Hintcomb, Marlbury and Mellstock drew pupils from similar socio-economic backgrounds and so were subject to the same contextual pressures, yet the problem of pupil discipline in the two Least Effective schools (Hintcomb and Marlbury) may have influenced their priorities. The headteacher of Hintcomb spoke with frankness about a recent problem experienced by the school:

*"At one time a couple of years ago we were quite concerned with, I suppose what you call discipline problems, or discipline concerns, and then the goal perhaps would have been to create a secure consistent environment in which, their behaviour could become well regulated, but I think we've done that, and I think we're turning the focus very much now on pupil achievement."*

Similarly, the headteacher at Marlbury was candid about the discipline problems experienced by one of her staff and the issue of poor pupil behaviour was mentioned in the Ofsted report of another Least Effective outlier, Shaston. By comparison, pupil behaviour was praised in three of the Most Effective schools for which there was either interview or Ofsted data available. Interview data showed that any problems of pupil indiscipline had been dealt with by the headteacher of Mellstock (Most Effective) on her

arrival two years earlier. Teacher 2, hardly a close disciple of her headteacher, commented:

> *"There's been a lot of changes in the school and, I think the children are starting to appreciate it; they can see the differences, and we've had stricter discipline which they basically lack in this area; and it has helped towards the learning atmosphere."*

The creation of this learning atmosphere meant that Mellstock had clearly dealt with one of the key preconditions of effectiveness. It may be that the two Least Effective schools had yet to effectively address the issue of pupil discipline and the emphasis on social objectives was a manifestation of this. Whether a commitment to independent learning, learning by discovery, learning by doing rather than listening can be realised without an orderly environment being in place is questionable. Paradoxically this kind of pedagogical culture could make it harder for the Least Effective schools to achieve their social aims.

Interestingly, when asked to identify a single piece of advice to give a teacher about to start their probationary year, nearly half of teachers in Most Effective schools chose the phrase *"establish your authority from the outset"* whereas only a quarter of teachers in Least Effective schools chose this advice. Table 8.6 shows that of the latter group, 46 per cent felt a probationer's main priority should be to establish a happy, secure atmosphere in their classroom.

**TABLE 8.6**

**Which one of the following pieces of advice would you give a probationary teacher about to start their first term of teaching?**

| **Statement** | **Most Effective** (%) *(n=16)* | **Least Effective** (%) *(n=13)* |
|---|---|---|
| Establish your authority from the outset | 44 | 23 |
| Establish a happy, secure atmosphere in your classroom. | 31 | 46 |
| Pace yourself | 13 | 8 |
| Don't be afraid to experiment | 0 | 0 |
| Learn each child's name as soon as possible | 0 | 0 |
| Other | 12 | 23 |

It could well be argued that the establishment of a teacher's authority is a precursor to the creation of any atmosphere, happy or otherwise. The priority given to the need to establish a teacher's authority may explain why teachers in Most Effective schools appeared to have fewer problems with pupil discipline.

There are clearly some differences in goal emphasis which appear to be associated with effectiveness. The next section examines in more detail some of the links between differences in beliefs about pedagogical practice which have been uncovered by the statistical analyses.

**A summary of the links between beliefs about pedagogical practice and effectiveness**

Applying three kinds of statistical tests to the data, Pearson r, Mann Whitney and chi square, produced statistically significant differences in attitudes to six pedagogical strategies. Effectiveness appeared linked to the belief that teaching was most effective when:

- Pupils are given the freedom to choose which topics to study. [Pearson]

Effectiveness appeared linked to the belief that children learnt best when:

- They are taught didactically as part of a whole class lesson. [Pearson r, Mann Whitney]
- They are taught specific subjects rather than an integrated curriculum. [chi sq.]
- They are regularly tested. [chi sq.]

Ineffectiveness appeared to be linked to the belief that children learn best:

- When provided with work which is demanding. [Pearson]
- By doing rather listening. [Mann Whitney]

In order to explore these links further, responses to the American teaching strategy of Direct Instruction were examined.

## Reactions to Direct Instruction

The roots of Direct Instruction are to be found in the research of Rosenshine (1983) who concluded that students taught in a structured way do better than those taught in an individualised way through discovery learning. He also argued that those students who are taught directly by the teacher achieve more than those left to learn new material on their own. It was hoped that reactions to the model of Direct Instruction, which is similar to the whole class interactive approach promoted by Reynolds (1996) and Woodhead (1996), would unearth a difference of attitude between the outliers. The link between effectiveness and a positive attitude towards didactic teaching has already been established statistically, and it was anticipated that reactions would divide along similar lines. It was also expected that this question might reveal a greater willingness to try new ideas. Hidebound theorists might reject Direct Instruction for its narrow behaviourist approach. However, Table 8.7 below indicates that responses to Direct Instruction did not yield any great differences in attitude.

**TABLE 8.7**

**A comparison between mean outlier responses to the acceptability of Direct Instruction**

| Qu. | Statement | Most Effective *(n = 16)* | Least Effective *(n = 12)* | **Difference** | U |
|---|---|---|---|---|---|
| 7.3 | How acceptable would Direct Instruction be to you? | 2.94 | 2.75 | **0.19** | Not Sig. |
| 7.4 | How acceptable would Direct Instruction be to other teachers in your school? | 3.25 | 3.00 | **0.25** | Not Sig. |

Interestingly both groups showed a slightly different attitude towards the eight pedagogical elements of Direct Instruction (see Table 8.8 below). The Most Effective were more positive towards the idea of *"careful structure"* and *"proceeding in small steps but at a rapid pace"* and *"providing regular feedback in the initial stages of learning"*. By contrast, proportionately more of the Least Effective group favoured "*giving more detailed instructions and explanations*" and more favoured "*a higher frequency of questioning*".

## TABLE 8.8

## An analysis of the responses of the outliers to the value of the eight elements of Direct Instruction

| qu 7.1 | Statement | Most Effective *(n = 16)* | [%] | Least Effective *(n = 12)* | [%] | Difference [%] |
|---|---|---|---|---|---|---|
| 1.1 | Carefully structuring the learning experience | 15 | 94 | 10 | 77 | **17** |
| 1.2 | Proceeding in small steps but at a rapid pace | 7 | 44 | 4 | 31 | **13** |
| 1.3 | Giving detailed and more instructions than usual | 2 | 13 | 4 | 31 | **-18** |
| 1.4 | High frequency of questions and overt, active practice | 6 | 38 | 7 | 54 | **-16** |
| 1.5 | Providing feedback and corrections, particularly in the initial stages of learning | 10 | 63 | 6 | 46 | **17** |
| 1.6 | Success rate of 80% or higher in initial stages of learning | 7 | 44 | 6 | 46 | **-2** |
| 1.7 | Dividing assignments into smaller segments and devising means of frequent monitoring | 3 | 19 | 8 | 62 | **-43** |
| 1.8 | Providing for continued student practice [over learning] so they have a success rate of 90-1005 and become rapid, confident and firm | 4 | 25 | 4 | 31 | **-6** |

The most substantial difference concerned the commitment to *dividing assignments into smaller segments and devising ways to provide frequent monitoring".* In all, 62 per cent of the Least Effective group felt that this strategy was most likely to promote effective learning whereas only 19 per cent of the Most Effective schools did. It is difficult to divine any deeper significance in this difference, although it could imply that Less Effective schools had lower expectations of the capabilities of their pupils. However, it is more likely that this difference reflects a lack of consistency in interpreting exactly what the descriptions of each of the elements of Direct Instruction meant. Given the origin of the idea of Direct Instruction, it is quite probable that American teachers would attach a similar meaning to the activity described in the eight elements; it is unlikely that the same consistency would be achieved with British teachers.

## Accepting responsibility for pupil learning

There appeared to be no significant differences in attitudes towards the importance of external constraints. Both groups of outlier schools felt equally responsible for pupil progress or lack of it and felt that socio-economic factors had a similar bearing on pupil achievement (see Table 8.9 below).

**TABLE 8.9**

**A comparison of the degree of acceptance of responsibility for pupil progress**

| Qu. | Statement | Most Effective *(n=16)* | Least Effective *(n=12)* | Difference [%] | U |
|---|---|---|---|---|---|
| 6.3 | How far do you feel personally responsible for a pupil's progress or lack of it | 1.38 | 1.38 | nil | not sig. |
| 6.5 | How important do you think socio-economic factors are in influencing levels of pupil achievement in your school | 1.94 | 1.77 | 0.17 | not sig. |

The issue of external constraints was examined in more detail in Table 8.10 and respondents were asked to assess how far 11 variables acted as constraints upon their teaching.

**TABLE 8.10**

**What are the biggest constraints on your teaching?**

| **Question 5.4** | **Most Effective** *(n=16)* | **Least Effective** *(n=12)* | **Difference** | **U: MW** |
|---|---|---|---|---|
| size of class | 63 | 54 | 9 | not sig. |
| children's background | 25 | 46 | 21 | not sig. |
| lack of parental interest | 25 | 54 | 29 | not sig. |
| SAT tests | 6 | 0 | 6 | not sig. |
| National Curriculum | 38 | 39 | 1 | not sig. |
| size of my classroom | 13 | 23 | 13 | not sig. |
| lack of books/resources | 19 | 23 | 4 | not sig. |
| attitude of the children | 19 | 39 | 20 | not sig. |
| behaviour of the children | 31 | 46 | 15 | not sig. |
| **lack of subject knowledge** | 31 | 0 | 31 | **sig. 0.05** |
| lack of time | 56 | 39 | 17 | not sig. |

Although not statistically significant, a greater proportion of the Least Effective group felt that children's background, the attitude of the children and a lack of parental

interest were more important constraints on their teaching than the Most Effective group. This perhaps is surprising when the social contexts of both outlier groups are compared. Table 8.11 below shows that both the mean percentages of FSM pupils and the ability spread were very similar.

**TABLE 8.11**

**A comparison of the outliers' contextual factors**

| | Mean % of FSM pupils | Mean % of pupils with below ave. reading scores |
|---|---|---|
| Most Effective Group | 26.6% | 57.3% |
| Least Effective Group | 28.3% | 56.3% |

The headteacher at Hintcomb (Least Effective) felt that the capabilities of children were the biggest constraint on her teaching while the headteacher of Mellstock (Most Effective) felt her duties and role as headteacher undermined her effectiveness as a classroom teacher. The interview data also revealed a difference of perspective about the constraints created by the introduction of the National Curriculum. The Least Effective interview schools were most concerned about the volume of content to be covered and its consequences for their teaching. Teacher 1 at Hintcomb (Least Effective) regretted the loss of autonomy:

> *"We do continuously complain about the large amount of content which doesn't give us time to do things with the children that we would like."*

The headteacher of Marlbury (Least Effective) felt that despite revisions, the content of the National Curriculum was still not appropriate for many of her pupils:

> *"Again, there have been improvements* [to the National Curriculum] *because some of the worst things were things like having to teach some of the earth and space stuff to children who hadn't got much concept about where they lived let alone where other things were. It happens within the History as well. This term we've been teaching about life in the 1940s to some children who quite honestly wouldn't be able to tell you what happened yesterday. It's things like that and I think that's particularly true at KS2 - where you end up, if you're not careful, doing some rather farcical work with children. Particularly children with extreme special needs, where instead of actually teaching them about*

*Ancient Greece you really would like to do something just about what they were like when they were young, what they're like now, which at least might given them something within their scope."*

Staff at Mellstock (Most Effective) were less concerned with the amount of content in the National Curriculum rather the paperwork that siphoned energy away from pupils. They appeared more concerned with the delivery aspect rather than the content or relevance of the National Curriculum.

**Subject centred versus integration**

Table 8.10 (p. 178) shows that the one statistically significant difference in terms of constraints on teaching centred on subject knowledge. Thirty-one per cent of staff in the Most Effective schools rated their lack of subject knowledge as being one of the biggest constraints on their teaching. By contrast, no-one in the Least Effective group of schools felt constrained by a lack of subject expertise. This difference is supported by the greater weight given to a subject-centred approach to the curriculum in the Most Effective schools and to the importance of children learning specific subjects such as English and Maths at Key Stage 2 (see Table 8.12 below).

**TABLE 8.12**

**A comparison of responses to the specific subject/integration questions**

| **Question** | **Most Effective** *(n=16)* | **Least Effective** *(n=12)* | **Difference** | **U: MW** |
|---|---|---|---|---|
| 6.6: How important is it that children learn specific subjects other than Maths and English at KS2? | 1.31 | 1.69 | 0.38 | not sig. |
| 3.12: Children learn best when taught specific subjects rather than an integrated curriculum | 2.81 | 3.31 | 0.50 | not sig. |
| 4.17 Teaching is most effective when an integrated topic based approach is used | 2.88 | 2.39 | 0.49 | not sig. |

The interview data supports these differences. Staff at Hintcomb (Least Effective) were unanimous in their advocacy of the virtues of an integrated approach for

delivering the National Curriculum but Teacher 2 felt, perhaps paradoxically, that pupils should be made aware of the subject origin of the content they were studying:

> *"We do a certain amount of integrated topics; however, I always make a point of saying to the children: 'Right today we are going to be looking at Christopher Columbus' voyage. We'll be doing some map work, we'll be doing some Geography, and I usually do tell them the name of the subject that they are doing within that part of the topic so I think it helps them form an understanding of that particular subject."*

The three staff at Marlbury (Least Effective) were more equivocal but felt that discrete subjects should influence planning although delivery was very much a matter of personal preference. The headteacher at Marlbury described the divergence of opinion at her school:

> *"How people then actually deliver that, this is the very discussion we've had because we've got a slight split between a group of teachers: the Year 5 and 6 teachers who like to teach an umbrella topic like houses and homes, and part of that will be a section on Tudor life that will be interwoven with testing out materials etc., whereas the Year 3 and 4 teachers prefer to do a block on, say Tudor, and a block on materials. My view is that it doesn't matter which way you actually deliver it."*

At Mellstock (Most Effective) all three staff were strongly in favour of a single subject approach. The headteacher rationalised this belief thus:

> *"You've only got to look at the child taught by a teacher who is very good at one particular subject, to see how much progress they make, how much they enjoy that subject. I think it's time we started moving along middle school lines and actually having subject specialists."*

The critical role of the headteacher in school effectiveness has been examined in Chapter 3 (see pp. 72-8). The next section explores some of the links between leadership and effectiveness suggested by the evidence gathered in this research.

**School leadership: the evidence from Inspection data**

The interview data suggested that the pedagogical convictions of the headteachers in this research appeared to differ and to be related to effectiveness.

However, possessing certain beliefs about teaching and learning does not guarantee that these beliefs will influence classroom practice or pupil outcomes. The degree of influence of the headteachers' convictions may reside in styles of leadership and so the Ofsted inspection reports were examined to see how far the leadership of the two groups of school appeared to reflect the dimensions of leadership outlined in Chapter 3.

**(i)** ***Purposeful leadership***

Strong leadership with a clear sense of direction appeared to be a feature shared by the Most and Least Effective Schools. Wellbridge (Most Effective) was described by Ofsted in June 1994 as benefiting from:

> *"strong and effective leadership that gives a clear sense of purpose which is evident in all aspects of its life and work."* (para.123)

The headteacher of Knollsea (Most Effective) was praised in 1996 for her: *"strong and purposeful leadership."* (para.45) In December 1995, Ofsted congratulated the headteacher of Mellstock, a Most Effective school, for her *"dynamic leadership"* (para.145). Yet similar plaudits were heaped on the headteachers of three of the Least Effective schools; in January 1995 the inspection team at Casterbridge commented:

> *"The headteacher, who has been in post for less than two years, and the management team have a clear sense of purpose and are intent on raising standards in the school."* (para.135)

In September 1994 Ofsted reported that the headteacher at Shaston (Least Effective):

> *"leads by example and provides strong leadership in many aspects of school life. This is particularly so in respect of discipline and also support and guidance to staff, governors and parents."* (para.109)

It would be difficult to equate effectiveness with a lack of direction, however purposeful leadership may be an important precursor for greater effectiveness but no more. The evidence from this research suggests that a sense of purpose does not automatically feed through to enhance pupil outcomes.

### *(ii) Participative*

Widespread consultation was a feature common to both categories of schools: the school development plan of Shaston, (Least Effective), was the product of *"a good level of review and consultation evident in its formulation"* (para.111. Sept. 1994). At Hintcomb, (Least Effective):

> *"The school's management structure is carefully thought out and works well. It provides the means for passing information, and more importantly the means for consultation, for individuals to contribute and for capitalising on the strengths and interests of individuals."*
> (para.137. Feb.1996)

An equal measure of praise was directed at the Most Effective schools. At Knollsea:

> *"Everyone in the school is properly involved in reviewing the work of the school, identifying areas for development and setting targets."*
> (para.46. May 1996)

At Wellbridge, the School Development Plan:

> *"is comprehensive and has been successfully produced by all staff working together."* (para.125. June 1994)

Therefore, it appears as though the level of participation in the decision-making process (at least as judged by inspectors) does not appear to equate with effectiveness.

### (iii) *Efficient management*

The Ofsted reports show that management and administration was deemed to be efficient and effective in both the Most Effective and Least Effective schools. Management efficiency does not therefore appear to be linked to academic effectiveness.

### *(iv) Maintaining a shared vision*

The inspection reports concluded that the development plan in each school was relevant and appropriate to the needs of each school and that in most cases was carefully linked to resources. Communication was reported as a strong feature of all schools,

both within the school and with parents and governors. In Hintcomb, the role of governors was highly praised:

> *"The governing body plays an important part in the strategic management of the school as leader and critical friend, and its contribution is highly valued. Its prime concerns are teaching, learning and achievement."*
> (para.136. Feb. 1996)

Despite the involvement of the governing body, Hintcomb was a Least Effective school. This suggests that a shared vision which has a focus on the key elements of effectiveness does not of itself correlate directly with effectiveness. It may be a precondition to greater effectiveness but a relevant shared vision does not guarantee that it will be achieved.

***(v) Accountability and responsibility***

There may be a difference in terms of the degree of accountability and responsibility that existed in the two categories of schools. In two of the three Least Effective schools, Ofsted recommended that middle and senior management roles be more closely defined. In Casterbridge:

> *"the roles and responsibilities of curriculum co-ordinators should be developed further."* (para. 135. Jan. 1995)

In Shaston(Least Effective):

> *"there is insufficient clarity and status to the management role and function of staff with positions of responsibility."*
> (para.109. Sept. 1994)

In both schools Ofsted recommended that a more systematic method of monitoring and evaluation should be established. By contrast the story was different in three of the four Most Effective schools. At Mellstock:

> *"The complementary role of subject and key stage co-ordinators ensures progression and continuity for pupils as they move through the school, often in mixed age classes. The production of subject and other plans and policies has been extremely well managed through the School Development Plan. The processes of implementing and monitoring the plans is being equally well carried out by co-ordinators."*
>
> (para.141, Dec. 1995)

At Knollsea:

> *"Formal monitoring and evaluation of the quality of the work in the school is undertaken by a number of staff with management responsibilities and support and guidance given to help teachers gain in confidence and expertise and improve their effectiveness in the classroom."* (para.45, May 1996)

However, there were two notable exceptions. Ofsted reported that the senior management team at Sherton Abbas, a Most Effective school, should do more to monitor standards of pupil achievement and subject curriculum plans. By contrast, the system of audit and monitoring at Hintcomb, a Least Effective school, was highly commended and was felt to play a key role in the process of development planning. The mean residual of Sherton Abbas was 6.1 points higher than Hintcomb's which may cast doubts on the strength of the correlation between monitoring and effectiveness. It may be that effectiveness was related to other more significant factors in those two schools and monitoring, or the lack of it, may have been more critical in the other five schools. It may also suggest that monitoring is only the first stage in improvement; what happens as a result of monitoring at the evaluation stage may have a more direct impact on pupil outcomes. Moreover, it may raise questions about the validity of the Inspection evidence and the judgements made at both Hintcomb and Sherton Abbas. Wilcox and Gray's (1996) analysis of the methodological problems of inspection concluded:

> *"Given the very large number of judgements which are made during an inspection it is highly unlikely that all will be impeccable and above criticism. Individual inspections will therefore differ in the degree to which they can be regarded as valid."* (p. 78)

It may be that conclusions drawn from inspection data need support from other forms of qualitative evidence. In this research project, interview data provided an additional kind of evidence.

### *(vi) A focus on instruction*

Analysis of questionnaire data suggested that the influence of headteachers over "instruction" was not related to effectiveness. There were no differences between the two outlier groups in the strength of influence headteachers were perceived to have in their schools over teaching methods, nor in the extent to which each group felt that a headteacher should influence teaching methods (see Table 8.13).

**TABLE 8.13**

**A comparison of the degree of headteacher influence**

| **6.1. To what extent <u>should</u> a HT influence teaching methods** | A great extent (%) | A fair extent (%) | Slightly (%) | Not at all. (%) | U: Sig. |
|---|---|---|---|---|---|
| Most Effective *[n=16]* | 32 | 68 | 0 | 0 | |
| Least Effective *[n=12]* | 23 | 77 | 0 | 0 | Not Sig. |
| **6.2. How far <u>does</u> your HT influence teaching methods** | | | | | |
| Most Effective *[n=16]* | 25 | 38 | 31 | 6 | |
| Least Effective *[n=12]* | 15 | 62 | 8 | 15 | Not Sig. |

All teachers reported that their headteachers influenced teaching methods to a fair or greater extent, yet only just over half in both groups regarded their headteacher's comments as a barometer of their effectiveness as teachers (see Table 8.14 below). Significantly, the teachers in Most Effective schools placed more weight on reading test results as barometers of their success as teachers which in turn may reflect a stronger academic culture in these schools. This culture may also reflect the perceived expectations of parents whose reactions were more important to teachers in Most Effective schools than those in Least Effective schools.

## TABLE 8.14

### How do you gauge if you are a good teacher?

| Question 5.3 / 11.3 | Most Effective *(n=16)* | Least Effective *(n=13)* | Difference [%] |
|---|---|---|---|
| Quality of work produced by children | 88 | 77 | **11** |
| The reactions of parents | 63 | 31 | **32** |
| SAT results | 19 | 15 | **4** |
| Reading Test results | 56 | 23 | **33** |
| Comments from the Headteacher | 56 | 54 | **2** |
| Comments from other teachers | 56 | 54 | **2** |
| How happy the children are | 69 | 85 | **-16** |
| Other | 56 | 54 | **2** |

The depth of influence of headteachers in general on the methods used by teachers in this research does not appear to have been particularly powerful or indeed lasting. Only four out of the 77 respondents stated that a headteacher, either past or current, had been the most important influence on their teaching methods. By contrast, over 50 per cent of both outlier groups reported that colleagues had been their most important influence. There was a slightly greater degree of support among the Least Effective group for the view that teaching was likely to be more effective when the headteacher frequently monitored what was happening in the classroom.

However, the interview data suggests a different story, particularly in relation to the degree of influence wielded by respective headteachers over classroom practice. The eclectic approach of the headteacher of Marlbury, a Least Effective school, led her to support a variety of approaches to teaching because:

> *"I don't think there's a single good method of teaching, and I don't think you can put your methods onto other people."*

Not surprisingly, the two staff who were interviewed reported that the head appeared to have no particular views on pedagogy: (Teacher1):

> *"As far as I know she's never actually said anything about a teaching method that I've used. I think she would encourage variety, then I've never actually discussed it with her in a formal or informal discussion."*

To the question: "How far does your headteacher influence teaching methods in this school?" Teacher 2 replied: *"Very little. (pause) Non teaching head....so...."*

Chase Primary is similar in size and catchment area to Marlbury, yet falls within the "Average" group in Model E. The approach of the headteacher of Chase Primary towards influencing teaching and learning was similar to that of the headteacher of Marlbury:

> *"I think I perceive myself as very laid back and supportive and not demanding of my staff, but I don't think the staff would perceive it like that."*

Teacher 1 of Chase Primary was appreciative of this approach:

> *"She lets us choose how we want to do it. She doesn't say you must do it this way, and she never says you can't do something - so it's quite good in that we're given the freedom to teach which suits every single person in the school."*

Teacher 2 of Chase Primary saw the headteacher's influence operating mainly in meetings:

> *"She influences them* [teaching methods] *in as far as when we have meetings, when we are talking about how we are going to teach English or we are going to teach technology or whatever - she was always there, putting her points of view and that type of thing."*

This lack of certainty may reflect the non interventionist stance articulated by the headteacher. However, this freedom whilst applauded by Teacher 1, also presented serious drawbacks. Teacher 1 bemoaned the lack of structure in certain curriculum areas, in particular mathematics:

> *" The feeling in the school is that a* [maths] *scheme isn't necessary, and this is where I feel I'm doing a chunk here, a chunk there, a chunk anywhere. Unless I put myself on a scheme, which I have, I would feel that I was doing it willy nilly - with no order whatsoever - and nothing to make sure I cover certain things."*

The ubiquitous meetings referred to by Teacher 2 and the desire to reach consensus apparently did little to enhance teaching methods. Teacher 1 reported:

*"We had our meeting for handwriting and we wanted consistency throughout the school. Great, at last I thought, because if you don't have the consistency when you start doing joined handwriting in the Juniors especially, the children will have to relearn a new style every year. So we had a meeting and we all agreed when a letter should join and the kind, for instance a "K"- how do you want to do a "K", that was a good one. We went on for about 20 minutes on which "K" we should have, so we all agreed that, then I said "Can I have a photo copy so I can do it?" There isn't one; it has not arrived yet so we do all this and we have really good intentions, and the thoughts are there, it just seems that as a school we have trouble implementing them, and keeping it going."*

Perhaps this may partly explain why neither Chase nor Marlbury appeared in the Most Effective category.

**The professional background of the headteachers**

The career profiles of both groups of headteachers was investigated for possible links with effectiveness. In terms of age, the heads of the Most Effective schools were slightly older: three out of the seven were 51 or over whereas all the headteachers of Least Effective schools were aged between 41 and 50. Interestingly, headteachers of the Most Effective schools had been in their present post for longer than the Least Effective; the mean average length of service of the headteachers in the Most Effective was 7.7 years compared to 4.2 in the Least Effective. This supports the conclusions of Mortimore et al. (1988) who found that the length of time a headteacher spent in their present post was linked to effectiveness. Where a headteacher had been in post for less than three years, pupil progress tended to be poorer whereas headteachers who had been in post between three and seven years had a positive impact on pupil progress. Mortimore et al. (1988) argue that having established themselves, headteachers with experience felt more confident to implement developmental strategies. They further suggested that some of the changes made at the beginning of a headship may not actually come to fruition until a head had been in post for a few years.

The spread of subject specialist backgrounds between the two groups of headteachers did not appear to be significantly different. The Most Effective group contained two historians, two geographers and three English specialists. Two of the

Least Effective group were drama specialists, two were historians and one was an English specialist. However, the small number in each outlier makes any conclusion tentative at best.

**The influence of theory**

The influence of both Piaget and Plowden appeared equally strong on the teachers in both categories. Table 8.15 shows that they counted for 50 per cent of the influences mentioned by staff in the Most Effective schools and 55 per cent in the Least Effective schools.

**TABLE 8.15**

**Whose ideas on teaching and learning have influenced your beliefs and practice?**

| | | Piaget | Plowden | Skinner | A.S. Neill | No-one | Teachers | Mortimore | Others |
|---|---|---|---|---|---|---|---|---|---|
| **Most Effective** | % | **29** | **21** | **4** | **7** | **11** | **7** | **7** | **14** |
| | *n* | *8* | *6* | *1* | *2* | *3* | *2* | *2* | *4* |
| **Least Effective** | % | **22** | **33** | **15** | **7** | **11** | **4** | **0** | **7** |
| | *n* | *6* | *9* | *4* | *2* | *3* | *1* | *0* | *2* |

However, among headteachers there were differences in the source of influence and this may explain the different perspectives on leadership. The proportion mentioning Piaget was similar (four out of eight of the headteachers in the Most Effective schools and three out of five in the Least Effective schools), but the proportion of those who quoted Plowden was different although not statistically significant. All five of the heads in the Least Effective schools regarded the ideas of Plowden on teaching and learning as an influence on their beliefs and practice whereas only three out of the eight headteachers in the Most Effective schools did.

Interestingly the headteacher of Mellstock (Most Effective) referred to the more recent impact of the National Curriculum as a significant influence:

> *"It's only really been since 1988 and the introduction of National Curriculum that we have actually come to grips with thinking about ourselves in terms of how we teach, and the methods we should be using, and so I suppose it's got to be the National Curriculum and all that's come with it, not that the National Curriculum has shown me the light, but all the debate it's promoted."*

She went on to claim that the answer to the problem of delivering the National Curriculum was found in the Ofsted framework. The headteacher conferences and literature of the Suffolk School Improvement Project had forced a re-examination of her concept of effective teaching and provided much needed reassurance. She commented on the constraining impact of the progressive orthodoxy highlighted by Alexander (1991) [see Chapter 3 pp. 70-1].

> *"Because I went to that talk* [LEA headteacher conference on the Value Added Project] *that gave a lot of the theory behind what makes an effective teaching situation. So, that's awful isn't it? Eighteen years not thinking! But I think it was because very strong messages still come from LEAs and advisers that were what I felt for many, many years, particularly in one core subject were totally very wrong. And it takes a lot of courage when all around you are going with the flow; there was no debate, no discussion, we taught and advisers told us, and we all agreed and that was it. We never discussed the different, well you may have I didn't. And that is a fault of LEAs."*

It would be extremely difficult to identify with any precision how the influence of Plowden on the headteachers affected classroom practice in the Least Effective schools. However, it has been shown that the pedagogical practice in the Least Effective schools displayed more of the features associated with Plowden. It is possible that the influence of Plowden on the headteachers may have shaped classroom practice in their schools.

**Contextual influence on leadership**

It has been argued that the impact of context may be critical in influencing the impact of principal behaviour. Teddlie and Stringfield (1993) argue that a leadership strategy which is appropriate in an effective middle SES school may not be in an effective low SES school. Mellstock Primary serves a more economically disadvantaged catchment area than both Marlbury and Chase Primary. The 1994 to 1996 mean FSM at

Mellstock was 57.3%, whilst at Marlbury it was only 28.9% and at Chase 46.6%. The mean percentage of pupils with 6+ reading scores below the average was however similar as the Table 8.16 shows:

**TABLE 8.16**

**A comparison between mean FSM, ability composition and value added residuals for 1994-6**

| School | Mean FSM | Mean ability composition[30] | Mean value added residual |
|---|---|---|---|
| Mellstock | 57.3% | 68% | 2.00 |
| Chase | 46.6% | 71.6% | -1.01 |
| Marlbury | 28.9% | 79.3% | -2.12 |

The head teacher of Mellstock (Most Effective) had a much more interventionist approach that did not confine itself to formulating policies but involved influencing instructional behaviour:

> *"I think there's got to be a lot more monitoring, a lot more going in. You become a head, you assume everybody does it like you do; they put in the hours, they do the planning, they do the preparation. You go into classes and as I say, I'm shocked and quite appalled that my assumptions have been proved so very wrong, and I will never do that again. So it's a case of yes I'll monitor them. And I will go in as often as necessary, because as much as one massages egos of people, if they're not doing an effective job, they've got to do something about improving it."*

Apart from monitoring classroom practice on a regular basis, the headteacher used the knowledge gained to encourage team teaching with less effective staff working along side the more effective. Perhaps not surprisingly, Teacher 1 of Mellstock spoke of the headteacher as being the most important influence on her teaching methods:

> *"Well, in the past my colleagues, and in the past couple of years most definitely the head teacher, she's very encouraging, she's very demanding but very encouraging, very organised, very knowledgeable, gives good leadership."*

---

[30] This figure represents the mean percentage of pupils in each school with a reading score at or below the 6+ mean of all schools in the Suffolk School Improvement Project.

Teacher 2 was not quite so effusive in her praise and earlier responses suggested that she was not a disciple of the headteacher's leadership style which makes her following comments even more pertinent:

> *" I think the head has changed a lot of things in the classroom as well. Some we disagree with, but we have to get on with it and do what's expected. But it's been fantastic with the discipline; it does help to have someone behind us."*

Although in some respects the SES context of Mellstock was more demanding, it is clear that the headteacher had managed to address successfully this issue without in any way diluting her instructional leadership role. This may in part explain why Mellstock is in the Most Effective school category.

**Development planning**

One of the Most Effective schools was criticised by Ofsted for shortcomings in policy statements regarding English and improvements were called for in the area of progression and continuity. Two of the three Least Effective schools were complimented for the quality of their documentation and planning. Perhaps, therefore, the differences between the two categories may lie in the turning of policy into effective practice. Two schools in each category made the development of reading skills a high priority in their schools. In the Ofsted reports on two of the Most Effective schools, Wellbridge and Knollsea, neither of which prioritised reading, both schools were criticised for the lack of progress made in developing pupils' oral and writing skills. Although not reported, it may be that these schools both paid more attention to the development of reading than to oracy or writing. However, two of the Least Effective schools, Casterbridge and Hintcomb, were praised for standards achieved by their pupils in writing and speaking and listening. Casterbridge was also complimented for the priority given to reading in the school and at Hintcomb the co-ordinator for English:

> *"has clear ideas about ways in which the subject can be developed and is actively involved in the initiative to raise standards."*
>
> (para. 46. Feb.1996)

In conclusion, the Ofsted and LEA review data provide only a few clues as to why some schools were more effective in the teaching of reading than others. All seem to be following similar strategies which were being delivered to a similar standard. Pupil learning appeared to be of a similar quality although pupil progress appeared significantly different. This may again call into question the usefulness of Ofsted judgements as a guide to effective practice.

**Attitude towards reading scores**

It has already been shown in this chapter that effectiveness appeared linked to the importance the school and classroom teachers attached to ensuring that each pupil developed their reading skills to the full. There was no statistically significant difference in attitude to the value of reading scores as measures of cognitive development, but there appeared to be a small but significant difference in attitudes towards the use of reading scores as a measure of teacher effectiveness. Table 8.14 (p. 187) shows that 56 per cent of teachers in the Most Effective group believed that reading test scores were an indicator of the quality of their teaching compared to only 23 per cent of teachers in the Least Effective group.

Reactions to the usefulness of the 6+/ 8+ value added data based on reading scores, however, varied amongst the interview schools. The headteacher of Chase (an Average school) did not regard the Suffolk Reading Test as being very useful in terms of measuring a pupil's cognitive development:

> *"The Hagley* [Suffolk Reading Test] *test in particular is a test of middle class comprehension, because in fact the vocabulary used in it is not appropriate for the children in this school. Our children don't know what venison is, they don't know what cutlery is, they don't use words like that."*

Teacher 2 at Chase supported this view and argued that tests per se were alien to their school and it was felt this would further jeopardise their pupils' progress:

*" This is a school where apart from obviously the SATs, testing is not a huge part of our way of teaching if you like. I think that in a way the children don't do as well as they might in reading tests because they are not used to that kind of thing."*

Scepticism underpinned the comments of staff at two of the Least Effective Schools, Lulwind and Hintcomb. Teacher 1 at Lulwind argued:

*"Every reading test you do with a child can be pulled to pieces in some way and it was very much brought home to me when a child with a Statement of Special Needs got 120 on the Suffolk Reading Test. I put it down to my brilliant teaching, because he had scores of below 70. I don't think they tell you much."*

The headteacher of Marlbury (Least Effective) was equally circumspect:

*"On an individual level I think there's always this slight conflict between what you feel you know about the child and what the test result shows. I mean if an individual scores significantly different to how you expect, you tend to blame the test or the child's reaction to that test."*

Teacher 2 at Marlbury complained:

*"They* [reading tests] *can't be used as an indicator of reading level necessarily; our children here are able to read much <u>better</u> than the tests show."*

By contrast, staff at Mellstock, a Most Effective School, were far more positive in their attitude to the value of the Suffolk Reading Test data. The headteacher of Mellstock was enthusiastic:

*"We use them very highly here, because they're a standardised measure, something we can actually come to grips with. If literacy is the key to the curriculum, if you can raise those levels, then you stand a lot more chance of improving in other areas don't you?"*

Teacher 3 at Mellstock (Most Effective) described the diagnostic value of the data and the impact this could have on teaching strategy:

"[the data] *makes you think, what am I doing that's not correct? Why isn't the child achieving? Is it that they are poor learners, poor retention, not interested? It's often the boys who are not interested, so*

*you have to take them off the reading scheme and read sports books, or adventure stories; this is what we decided to do in school. Once we see them not interested in books, we're allowed to take them off the scheme and try and keep them going".*

The attitude to the integrity of reading test data and its value clearly shaped not just policy but also practice at Mellstock. This may help to explain why pupils at Mellstock made more progress. The headteacher at Mellstock saw reading tests in a more opportunistic light than her peers, particularly as a way of raising the morale of staff and enhancing the reputation of her school. In her evaluation report of the first year of the Suffolk School Improvement Project (1994), she wrote:

*"In "disadvantaged" schools reading results are often a negative measure of how poorly our children are doing compared with Suffolk or national averages. To look at the value added measure and see that we are very close to County norms has provided much needed positive feedback and motivated staff to work towards greater improvements."*

**Strategies used to teach reading**

Schools were asked in the questionnaire to describe the strategies they used to identify children with limited reading skills. Both groups saw the development of individual reading skills as an important priority for their school. The Most Effective schools appeared to be able to recall a greater variety of strategies to help children with limited reading ability. The mean number of strategies described by Most Effective schools was 5.5 compared to 3 described by Least Effective schools. Interestingly, Least Effective schools claimed to spending more time per week, 2 hours 42 minutes, with their class specifically developing reading skills than the Most Effective who only claimed to spend an average of 1 hour 56 minutes a week. Therefore, differences in reading scores do not seem to reflect differences in belief about the importance of developing reading skills nor the amount of time spent, but rather the variety of strategies used. The eclectic approach of the Most Effective may reflect a greater commitment to strive for improvement which in turn may buttress the view that all children can learn to read regardless of external factors. The key to effective teaching may lie partly in a determination to leave no stone unturned in the quest to enhance pupil learning.

A variety of strategies were used in all three of the Least Effective schools including phonics; in all four of the Most Effective schools a similar range of strategies was in evidence but only two of the Ofsted reports mentioned the use of phonics. There also did not appear to be any significant difference in the use of other strategies: two schools in each category were reported to be using commercially produced reading schemes; all of the Least Effective schools had enlisted the support of parents and one held 'reading mornings' for parents. Two of the Most Effective were reported to have similarly close links with the home; both a Least Effective and Most Effective school were complimented by Ofsted inspectors for making good use of reading journals.

Interestingly, only one school in each category was reported to be using the much vaunted whole class method. The value of this method received two very different comments from the respective inspection teams. Hintcomb, a Least Effective school whose mean residual between 1994-6 was - 4 was commended by Ofsted for its use of whole class teaching:

> *"Effective use is made of whole class sessions to introduce ideas and to draw together ideas at the end of a session."* (para. 45. Feb.1996)

However, the teaching in one class at Key Stage 2 in Knollsea, a Most Effective school whose mean residual between 1994-6 was 2.71, was criticised for being teacher dominated with too few opportunities being given for children to be actively participate in lessons. A similar comment was made in May 1989 in an LEA report on Marlbury, a Least Effective school:

> *"Staff need to be aware that such practice can offer little scope for creativity, problem solving or individual flair."* (para. 5.2)

It would be difficult to draw any firm conclusions about the efficacy of whole class teaching from such a slender evidence base. However, as with any strategy, the debate would be helped by a much more precise definition about what exactly effective whole class teaching involves.

## The quality of teaching and learning

The judgements made about the teaching of English in these schools do not suggest a causal link between the overall quality of teaching and the quality of progress in reading. Sherton Abbas, a Most Effective school with a mean residual of 2.07, was criticised for its quality of teaching of English that was described as *"varied"*. The teaching of reading was deemed to be given a high priority at the school but inspectors complained:

> *" At times planning is not sufficiently detailed and lacks clear learning objectives."* (para. 51. Oct.1995)

The quality of teaching in another Most Effective school, Knollsea, (mean residual 2.9) was also criticised for its uneven quality. An LEA review into Wellbridge, mean residual 2.4, commented similarly about standards in English:

> *"There is more variation in the work of some of the 6-8 year old children although satisfactory standards are achieved by many of the older pupils in Key Stage 2."* (para.39. June 1994)

By comparison, Casterbridge, the Least Effective school in the whole research with a mean residual of - 5.23, was praised by the inspectors for the priority given to reading:

> *"The quality of teaching and learning in English is at least sound and often good."* (para. 50) and *"There is a comprehensive and useful policy document for English."* (para. 51. Jan.1995)

Similarly the quality of teaching at two of the Least Effective schools, Hintcomb (mean residual -4) and Shaston (mean residual -2.12) was reported as being at least sound and sometimes good.

In two of the three Least Effective schools the quality of pupil learning was regarded in almost every lesson as sound or better. In the third the quality was deemed to range from the good to situations where pupil involvement and interest appeared lacking. A similar profile was reported in the Most Effective schools with the quality of

learning reported as sound or better in two of the schools but in one more variable. The fourth, Wellbridge, contained no comment about the quality of pupil learning.

In its report on the teaching of reading in three London boroughs, Ofsted (1996) made much of the link between the quality of teaching observed by its inspectors and the purportedly low standards of reading measured by reading tests. This research project suggests that the judgements of Ofsted inspectors about the quality of teaching and learning may not be the most secure, and hence the link between these judgements and reading outcomes is at best questionable.

## Conclusions: pedagogical beliefs, practices and school effectiveness

The evidence collected in this research suggests that there may be values and beliefs which are related to effectiveness. These values and beliefs underpin a pedagogical culture which is marginally more academically focused. The differences between effective and ineffective schools do not appear extensive nor do they reflect a fundamental divergence in strength of feeling. Indeed, the similarities in outlook between schools are substantially greater than any differences.

Differences of perspective, although few in number, may nevertheless be influential. Important differences appeared to emerge in the sphere of pedagogical goals which were more academically focused in the Most Effective schools, and in pedagogical strategy where traces of the influence of the ideology of Plowden seemed more evident in the Least Effective schools.

The pedagogical culture in the Most Effective schools seemed more homogeneous and may have reflected differences in leadership strategies. Headteachers in the Most Effective schools appeared to have been more successful in establishing some of the critical preconditions of effectiveness such as an orderly learning environment. Their use of effective monitoring strategies also fostered a greater sense of responsibility, among some of their staff, for pupil outcomes.

# CHAPTER 9

## Data Analysis and Results: School Improvement

"Real improvement cannot come from anywhere other than within schools themselves, and 'within' is a complex web of values and beliefs, norms, social and power relationships and emotions." Stoll (1998, p. 25)

### Correlations between school responses and pupil outcomes using the whole sample

In this section the question of links with school improvement is examined statistically. The criterion used to measure improvement was the difference between the adjusted value added residual for 1994 and that for 1996 (see Appendix 24). The average scale response for each of the 32 schools was plotted against the 1994-6 mean residual and a correlation coefficient using Pearson's product-moment was calculated for each question.

Table 9.1 shows that three statements out of 60 scale items tested produced statistically significant correlations with school improvement at the 0.05% level, using a one-tailed test. The coefficients of a further two statements suggested an association with improvement that was approaching statistical significance (p at 0.05 = 0.296)[31].

**TABLE 9.1**

**Statements which correlated positively with improvement**

| Qu. | Statement *(n=67)* | r | Sig. |
|---|---|---|---|
| 4.5 | Teaching is most effective when pupils are regularly tested | -0.33 | 0.05 |
| 4.3 | Teaching is most effective when a variety of methods are used | -0.33 | 0.05 |
| 1.13 | Ensuring each pupil's writing skills are developed to the full | -0.33 | 0.05 |
| 3.6 | Children learn best when they are regularly tested | -0.29 | n.s. |
| 1.6 | Making learning enjoyable [school goal] | -0.27 | n.s. |

NB: correlations are negative because numerically the rating scale used is the inverse of the scale used to measure improvement. The most positive rating point =1 (strongly agree), least positive = 5 (strongly disagree); the higher numerically the residual difference the greater the degree of improvement. Positive values for r indicate correlation with negative residuals

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[31] Appendices 28 and 29 contain a full list of the correlations for all 60 scale items.

The strongest association in terms of specific strategy was the link between school improvement and a belief in the value of testing as an aid to both teaching and learning. The correlational data also suggested that the more a school improved its residual between 1994 and 1996, the greater the importance teachers attached to the priority of developing writing skills to the full and of employing a variety of teaching methods. Although not statistically significant, the correlational data also suggested that learning should be enjoyable.

Table 9.2 demonstrates that one statement produced a statistically significant negative correlation at the 0.025 per cent level with school improvement and a further two statements had correlations that closely approached the 0.05 level of significance. The Declining schools had a greater commitment to the value of group work and believed that children learnt best when they worked with other children rather than on their own. Although not statistically significant, there also appeared to be a weak link between a declining residual and two further beliefs: the value of differentiation by outcome and the need to ensure pupils had a healthy diet.

**TABLE 9.2**

**Statements which correlated inversely with improvement**

| **Qu.** | **Statement** *(n=67)* | **r** | **Sig.** |
|---|---|---|---|
| 3.3 | Children learn best when working with other children rather than on their own | 0.41 | 0.02 |
| 4.8 | Teaching is most effective when pupils are given the same task but the outcomes are differentiated | 0.29 | n.s. |
| 2.1 | Ensuring pupils have a healthy and balanced diet (classroom goal) | 0.29 | n.s. |

## Comparing outliers: testing the significance of the two sample means

In order to explore some of the issues raised by the correlational enquiry in more depth, the data was examined from another perspective which involved comparing the mean results from the two outlier groups. The Model H framework, whose rationale has been described in Chapter 7 (see p. 157-8), was used to compare the responses of the Improving group of schools against the Declining group. The mean responses of the

two outlier groups for each scale item were compared and the Mann Whitney U test of statistical significance was applied to those which differed by 0.35 or more.

**TABLE 9.3**

**A comparison of mean responses of schools classified as Improving or Declining**

| Qu. | Statement | Improve | Decline | Difference | MW Test |
|---|---|---|---|---|---|
| 3.3 | Children learn best working with other children rather than on own | 2.79 | 2.27 | **0.52** | n.s. |
| 3.5 | Children learn best working in classes/groups of pupils of similar ability | 2.53 | 2.13 | **0.40** | n.s. |
| 2.7 | Preparing each pupil for the demands of secondary education (school goal) | 2.07 | 1.69 | **0.38** | n.s. |
| 4.18 | Teaching is most effective when pupils given freedom to choose topics to study | 3.21 | 3.56 | **-0.35** | n.s. |
| 4.20 | Teaching is most effective when lesson objectives are planned in advance | 1.20 | 1.56 | **-0.36** | n.s. |
| 4.16 | Teaching is most effective when tasks directly relevant to the child's own interests | 2.21 | 2.63 | **-0.42** | n.s. |
| 4.5 | Teaching is most effective when pupils are regularly tested | 2.54 | 3.31 | **-0.77** | **Sig. at 0.025** |

Only one question produced a statistically significant response. The Improving group believed more strongly that teaching is most effective when pupils are regularly tested.

**Comparing outliers: examining distribution frequencies**

The Mann Whitney Test identified only one significant difference between the means of the two outlier groups out of a total of 60 items. The largest difference in mean responses between the two Improvement outlier groups was only 0.77 which is less than the difference between two points on the rating scale (see Appendix 30 for a comparison of all the mean differences). This may demonstrate another weakness in the evidence base: the small number of respondents in each category which statistically may make it more difficult for significant differences to emerge if tests such as the Mann Whitney are applied. The Improving outlier group of seven schools contained data from 15 respondents, the Declining group of six schools contained data from 16 respondents.

Comparing mean scores also obscures differences in the distribution of responses within each outlier group, and so the frequency distribution of each group's response to the remaining questionnaire items was compared. Tables 9.4 and 9.5 show those statements which produced the greatest differences in terms of the frequency of agreement or disagreement.

**TABLE 9.4**

**Statements which showed the greatest frequency differences in terms of agreement**

| Qu. | Statement | Improve [%] | Decline [%] | Diff. [%] | Chi Sq. |
|---|---|---|---|---|---|
| 3.5 | Children learn best working in streams/sets | 47 | 75 | **-28** | n.s. |
| 3.3 | Children learn best working with other children rather than on own | 36 | 67 | **-31** | n.s. |
| 4.13 | Teaching is most effective when pupils work frequently in groups | 47 | 81 | **-34** | **Sig..0.025** |

**TABLE 9.5**

**Statements which showed the greatest frequency differences in terms of disagreement**

| Qu. | Statement | Improve[%] | Decline[%] | Diff. [%] | Chi Sq. |
|---|---|---|---|---|---|
| 4.5 | Teaching is most effective when pupils are regularly tested | 0 | 50 | **-50** | **Sig. 0.005** |
| 3.6 | Children learn best when they are regularly tested | 21 | 56 | **-35** | n.s. |
| 4.6 | Teaching is most effective when pupils all face the teacher | 21 | 56 | **-35** | n.s. |

Only two statements produced statistically significant differences. The Declining group had a significantly stronger commitment to group work (0.025; chi square =4.05, df=1) and a significantly greater number did not believe in the value of regularly testing (0.005; chi square =8.98, df=1). The apparently greater value placed upon testing in the Improving schools, which is supported by the correlational data and the Mann Whitney test result (see Table 9.1 and 9.5 above), may explain the increasing success of their pupils at reading tests. The culture of testing may ensure that pupils in these schools are more familiar with the issue of time management and the heightened stress which formal

testing can create. Regular testing can lead to greater reinforcement of learning and its retention. By comparison, the shortcomings of co-operative learning have been documented in Chapter 4 (see pp. 84-87) and this may partly explain the relative lack of progress by pupils in the Declining schools.

The remaining differences in frequency of agreement or disagreement, which approached statistical validation, were few but are of interest if not statistical significance. Two differences tend to support the conclusions emerging from the correlational analysis: the Declining group believed slightly more strongly that children learnt more through working with other children than on their own, whilst the Improving group believed more in the value of testing as an aid to learning. The only statement that did not confirm earlier findings was the stronger commitment of the Improving group to the belief that teaching was most effective when pupils all faced the teacher. This may be linked to the greater antipathy of the Improving schools to pupils working in groups. Interestingly, the Declining group had a stronger belief in the value of process. An analysis of Question 6.7 (see Table 9.6 below) showed that the Declining group believed that teaching pupils how to learn was more important than what they learnt. The mean difference was close to statistical significance (U=70). However, these interpretations must be viewed as very tentative given the overall number of cases and limitations of these data.

**TABLE 9.6**

**A comparison of responses to the statement that process is more important than content**

| Qu. | Statement | Improving *(n=15)* | Declining *(n=16)* | Difference | U |
|---|---|---|---|---|---|
| 6.7 | Teaching pupils how to learn is more important than what they learn | 2.15 | 1.63 | 0.52 | n.s. U=79 |

**The issue of linkage: pedagogical goals**

In terms of coherence between school and classroom goals, Table 9.7 shows that both groups appeared to have a very similar degree of overall consistency in the linkage between classroom and school goal.

## TABLE 9.7

### A comparison of mean responses to school and classroom goals

| | | Improve | | | Decline | | |
|---|---|---|---|---|---|---|---|
| **Qu.** | **Goals** | **school** | **class** | **diff.** | **school** | **class** | **diff.** |
| 1.1 | Fostering a pupil's spiritual development | 1.71 | 1.93 | **0.22** | 1.81 | 1.88 | **0.07** |
| 1.2 | Ensuring each pupil reaches highest NC AT | 1.07 | 1.36 | **0.29** | 1.13 | 1.19 | **0.06** |
| 1.3 | Ensuring each pupil acquires as much maths understanding | 1.07 | 1.01 | **0.06** | 1.31 | 1.31 | **0** |
| 1.4 | Ensuring that each pupil uses their spare time constructively | 2.64 | 2.69 | **0.05** | 2.44 | 2.44 | **0** |
| 1.5 | Ensuring each pupil acquires as much knowledge as possible | 1.53 | 1.61 | **0.08** | 1.73 | 1.63 | **0.1** |
| 1.6 | Making learning enjoyable | 1.0 | 1.07 | **0.07** | 1.25 | 1.23 | **0.02** |
| 1.7 | Preparing each pupil for the demands of secondary education | 1.73 | 2.07 | **0.34** | 1.56 | 1.69 | **0.13** |
| 1.8 | Ensuring each pupil becomes independent learner | 1.07 | 1.14 | **0.07** | 1.06 | 1.0 | **0.06** |
| 1.9 | Ensuring each pupil develops their reading skills fully | 1.01 | 1.07 | **0.06** | 1.1 | 1.06 | **0.04** |
| 1.10 | Ensuring pupils have a healthy and balanced diet | 2.21 | 2.5 | **0.29** | 2.31 | 2.25 | **0.06** |
| 1.11 | Making learning challenging | 1.21 | 1.36 | **0.15** | 1.31 | 1.26 | **0.05** |
| 1.12 | Ensuring pupils are happy | 1.07 | 1.25 | **0.18** | 1.28 | 1.25 | **0.03** |
| 1.13 | ensuring each pupils writing skills are fully developed | 1.07 | 1.14 | **0.07** | 1.19 | 1.25 | **0.06** |
| | **Mean** | **1.42** | **1.55** | **0.13** | **1.499** | **1.495** | **0.004** |

**A summary of the links between pedagogical goals and improvement**

Applying three kinds of statistical tests to the data, Pearson r, Mann Whitney and Chi Square, yielded only one statistical difference in terms of pedagogical goals. A Pearson correlational analysis suggested a link between improvement and a commitment to developing a pupil's writing skills to the full. A greater proficiency at writing would not necessarily increase a pupil's ability to record answers on the Suffolk Reading Test because pupils have to shade in boxes rather than write out answers. However, the link between the development of writing and reading proficiency is substantial and its significance has been fully described by Riley (1994). Schools that emphasise the development of writing are also improving reading skills and, of equal importance, their pupils' thinking skills.

There were no statistical differences in the other 12 goals identified by the research instruments. This lack of divergence in goal orientation suggests that the

remaining priorities did not directly link with improvement or decline in reading standards. Apart from the different emphasis given to writing, both groups appeared to value academic goals to the same degree at both school and classroom level. However, statistical differences did emerge over the choice of pedagogical strategy to realise those goals and this dimension is probably more important in terms of explaining improvement.

**A summary of the links between pedagogical practice and improvement**

Applying three kinds of statistical tests to the data, Pearson r, Mann Whitney and chi square produced statistical differences in attitudes to certain pedagogical strategies. Improvement in value added reading scores appeared associated with the following two beliefs about teaching and learning:

- Teaching is most effective when pupils are regularly tested. [Pearson r, Mann Whitney, chi square]

- Teaching is most effective when a variety of methods are used. [Pearson r]

Decline appeared linked to the following two beliefs about the value of group work.

- Teaching is most effective when pupils work frequently in groups. [Chi square]

- Children learn best when working with other children rather than on their own. [Pearson r]

In total only five out of the 60 scale items (8%) produced statistically significant differences which is less than the nine differences (15%) recorded for the effectiveness dimension (see p. 162)

**Reactions to Direct Instruction**

Staff in the Improving schools had a more positive attitude overall to Direct Instruction. When subjected to a correlational analysis, improvement correlated with a stronger overall commitment ($r = 0.49$, $p$ 0.005 level) towards Direct Instruction.

Improvement also appeared linked to the belief that Direct Instruction would be more acceptable to other teachers in the Improving schools, although this was not statistically significant (see Table 9.8).

**TABLE 9.8**

**A correlational analysis of reactions to the acceptability of Direct Instruction**

| Qu. | Statement | r | Sig. |
|---|---|---|---|
| 7.3 | How acceptable would Direct Instruction be to you? | -0.49 | 0.005 |
| 7.4 | How acceptable would Direct Instruction be to other teachers in your school? | -0.29 | NS. |

The mean responses to these questions were also compared (see Table 9.9) and the results support the correlational analysis.

**TABLE 9.9**

**A comparison between mean outlier responses to the acceptability of Direct Instruction**

| Qu | Statement | Improving | Declining | Difference | U |
|---|---|---|---|---|---|
| 7.3 | How acceptable would Direct Instruction be to you? | 2.35 | 2.77 | 0.65 | Sig. at 0.05 |
| 7.4 | How acceptable would Direct Instruction be to other teachers in your school? | 3.00 | 3.14 | 0.14 | NS |

These results may reflect a greater receptivity in Improving schools towards new pedagogical ideas which may in turn be part of a more pluralistic view of teaching. This eclecticism may also be reflected in the statistically significant correlation between improvement and the belief that teaching is most effective when a variety of methods are used (see Table 9.1 p. 200). This greater support may also reflect a more fundamental sympathy with Direct Instruction as a teaching method. Two of the headteachers of Improving schools saw the virtue of Direct Instruction residing in the pedagogical elements, which they regarded as universal hallmarks of effective teaching. In contrast, two headteachers in the Declining group viewed Direct Instruction as only appropriate for SEN pupils. Another, the headteacher of Trantridge (Declining), was worried that

the pace would put some children under undue pressure. However, despite this overall finding there was no statistical difference in attitude to any of the eight elements that made up Direct Instruction (see Table 9.10 below) which may suggest that the concept of Direct Instruction raises concern more than the individual elements of which it comprises.

**TABLE 9.10**

**An analysis of the responses of the outliers to the value of the eight elements of Direct Instruction**

| Qu. | Statement | Improving *(n=15)* | [%] | Declining *(n=16)* | [%] | Difference [%] |
|---|---|---|---|---|---|---|
| 1.1 | Carefully structuring the learning experience | 13 | **87** | 15 | **94** | 7 |
| 1.2 | Proceeding in small steps but at a rapid pace | 5 | **33** | 5 | **31** | 2 |
| 1.3 | Giving detailed and more instructions than usual | 7 | **47** | 7 | **44** | 3 |
| 1.4 | High frequency of questions and overt, active practice | 8 | **53** | 8 | **50** | 3 |
| 1.5 | Providing feedback and corrections, particularly in the initial stages of learning | 13 | **87** | 13 | **81** | 6 |
| 1.6 | Success rate of 80% or higher in initial stages of learning | 8 | **53** | 8 | **50** | 3 |
| 1.7 | Dividing assignments into smaller segments and devising means of frequent monitoring | 7 | **47** | 7 | **44** | 3 |
| 1.8 | Providing for continued student practice [over learning] so they have a success rate of 90-100% and become rapid, confident and firm | 8 | **53** | 8 | **50** | 3 |

**Accepting responsibility for pupil learning**

There was no significant difference between the outlier groups in the degree of responsibility felt for pupil progress. Responses to Question 6.3 produced a very strong degree of agreement; both groups felt similarly responsible. (see Table 9.11).

**TABLE 9.11**

**A comparison of the degree of responsibility accepted for pupil progress**

| Qu. | Statement | Improving *(n=15)* | Declining *(n=16)* | Diff. | U |
|---|---|---|---|---|---|
| 6.3 | How far do you feel personally responsible for a pupil's progress ? | 1.27 | 1.31 | 0.04 | n.s. |

This aspect of the research project also examined the perceptions which teachers had of the impact of external constraints. They were asked to assess how far the following 11 variables acted as constraints upon their teaching:

**TABLE 9.12**

**What are the biggest constraints on your teaching?**

| **Question 5.4** | **Improving %** *(n=15)* | **Declining %** *(n=16)* | **Diff.** | **chi sq.** |
|---|---|---|---|---|
| Size of class | 53 | 75 | **22** | NS |
| Children's background | 47 | 36 | **11** | NS |
| Lack of parental interest | 60 | 40 | **20** | NS |
| SAT tests | 0 | 10 | **10** | NS |
| National Curriculum | 33 | 33 | **0** | NS |
| Size of my classroom | 27 | 20 | **7** | NS |
| Lack of books/resources | 40 | 30 | **10** | NS |
| Attitude of the children | 40 | 30 | **10** | NS |
| Behaviour of the children | 47 | 10 | **37** | **0.05** |
| Lack of subject knowledge | 20 | 0 | **20** | NS |
| Lack of time | 53 | 58 | **5** | NS |

Respondents from the Improving schools group felt that the behaviour of the children was a bigger constraint on their teaching than their counterparts from Declining group. A chi square test of significance showed that the difference in attitude between the two groups was significant at the 0.05 level of significance (chi square = 3.71, df=1). This divergence cannot be explained by any differences in context. Both groups consisted of schools with a very similar mean percentage of pupils on free school meals and ability composition. Fifty per cent of pupils in the Declining schools had below average reading scores on the 6+ test whereas 55 per cent of pupils in the Improving schools were below average at 6+ (see Table 9.13 below).

**TABLE 9.13**

**A comparison of the outliers' contextual factors**

| | **Mean % of FSM pupils** | **Mean % of pupils below average reading score** |
|---|---|---|
| **Improving** | 21.55 | 55.04 |
| **Declining** | 21.87 | 50.11 |

However, the mean contextual figures for the Declining group may present a slightly distorted picture since the context of one of the schools, Trantridge, inflated the FSM average for the group. Trantridge, unlike the other Declining schools, serves a very disadvantaged catchment area in socio-economic terms; two thirds of pupils take free school meals and only a fifth had above average reading scores at 6+. Without Trantridge the FSM average for the other five declining schools is very different as Table 9.14 shows:

**TABLE 9.14**

**A comparison of the outliers' contextual factors without Trantridge**

| | **Mean % of FSM pupils** | **Mean % of pupils below average reading score** |
|---|---|---|
| **Improving** | 21.55 | 55.04 |
| **Declining** (-Trantridge) | 13.1 | 50.11 |

Despite having a slightly more favourable socio economic context, overall members of the Declining group believed that socio-economic factors were a greater influence on pupil achievement than did respondents from the Improving group. This difference was significant at 0.025 level.

**TABLE 9.15**

**The importance of socio-economic factors**

| **Qu.** | **Statement** | **Improving** *(n=15)* | **Declining** *(n=16)* | **Difference** | **U** |
|---|---|---|---|---|---|
| 6.5 | How important are socio-economic factors in influencing pupil achievement at your school? | 1.92 | 1.47 | 0.45 | Sig..at 0.025 U=64 |

The evidence from this aspect of the research project suggests that teachers in Improving schools appeared to place more weight on an internal factor, pupil behaviour, whereas the Declining group saw socio-economic conditions, a factor over which they felt they had no control, conspiring against them. Clearly focusing on internal issues is more likely to lead to improvement and this may help to explain the progress of

Improving schools. It may be that the choice and application of a particular pedagogical strategy is of greater importance in influencing pupil outcomes than any external perspective. Moreover, the aspect of teacher culture which may be more critical is the extent to which teachers believe that they can transcend the factors which they perceive are constraining them.

The concern over pupil behaviour does not appear to reflect any fundamental problems of this nature in the Improving schools. There is no evidence from the Ofsted data that pupil behaviour was a greater issue in any of the Improving schools although there is some evidence that it was an issue in three out of the four Declining schools. For example, Ofsted reported that at Trantridge:

> *"In some whole class lessons inadequate or inappropriate measures are taken to remedy poor behaviour resulting in diminished concentration on, and contributions to, spoken English."* (para. 28)

The greater concern over pupil behaviour in the Improving schools may simply reflect the frustration that a drive for improvement brings or possibly the existence of higher expectations about standards of acceptable behaviour.

**School leadership**

The relative influence of headteachers seemed similar. Both groups of outliers had a similar attitude to using the comments from their headteacher as a way of evaluating their own effectiveness, and both reported that their headteacher influenced teaching methods to a similar degree (see Table 9.16 and 9.17 below).

## TABLE 9.16

### How do you gauge if you are a good teacher?

| Question 5.3 / 11.3 | Improving *(n=15)* | Declining *(n=16)* | Difference [%] |
|---|---|---|---|
| quality of work produced by children | 100 | 81 | **19** |
| the reactions of parents | 47 | 38 | **9** |
| SAT results | 20 | 25 | **5** |
| Reading Test results | 47 | 44 | **3** |
| comments from the Headteacher | 47 | 44 | **3** |
| comments from other teachers | 60 | 44 | **16** |
| how happy the children are | 80 | 63 | **17** |
| Other | 33 | 50 | **17** |

Both groups of schools had a similar attitude to using the comments from their headteacher as a means of evaluating their own effectiveness (see Table 9.16 above). On this basis, the relative influence of headteachers therefore seemed similar. However, the Declining schools reported that their headteacher influenced teaching methods to a greater degree than teachers in the Improving schools although this difference was not statistically significant. This could imply that the influence of headteachers in the Declining schools was not only greater but also may not have had a positive impact on pupil outcomes. The greater involvement of headteachers of Declining schools may also reflect concern over lack of progress or the existence of problems which they wished to resolve.

## TABLE 9.17

### A comparison of the degree of headteacher influence

| Qu | Statement | Improving *(n=15)* | Declining *(n=16)* | Difference | U: Sig. |
|---|---|---|---|---|---|
| 6.1 | To what extent should a HT influence teaching methods | 1.77 | 1.81 | 0.04 | n.s. |
| 6.2 | How far does your HT influence teaching methods | 2.54 | 2.13 | 0.41 | n.s. |

Perceptions of the degree of headteacher influence may of course be different from reality and so the Ofsted inspection evidence was used to view the issue from a different angle. The characteristics of effective leadership have been outlined in

Chapter 3 (see pp. 73-8), and the inspection data was examined to see how the leadership in the schools in each outlier appeared to contain these attributes.

All the schools were reported by Ofsted to be well led with a strong commitment to consultation. The administration of each school was judged to be both effective and efficient. On the whole, communication was rated effective and the school development plans were seen to contain an appropriate vision for the future. The one important area of difference lay in the infrastructures which existed for monitoring and evaluation; all four of the Declining schools were criticised for failing to have an effective mechanism for monitoring standards. At Aldbrickham, (Declining), Ofsted reported in May 1995:

> *" the monitoring and evaluation, by the senior management team, of outcomes to be sought in terms of pupils' improved performance, is in need of greater emphasis. This is a key point for action."* (para.156)

At Trantridge (Declining) the senior management was criticised for its lack of monitoring and evaluation systems. At Lulwind (Declining), a much larger school, the monitoring of teaching and learning was in the throes of development. The problem also appeared to be in part structural and related to the responsibilities assigned to middle management:

> *"The leadership role of the middle tier of management is not yet established.....the leadership role within curriculum teams is not explicit. The clarification of the leadership roles within curriculum and management teams is a key issue for action."* (para.178 March 1996)

The problem appeared similar at Trantridge:

> *"there is a lack of clarity about the responsibilities of curriculum leaders and the ways in which their work should influence the work of teams....the responsibilities of subject leaders should be extended to include co-ordinating the planning, monitoring and evaluation of the school's work in their subject."* (para.88 October 1993)

By contrast the headteacher of Knollsea, an Improving school, was praised in May 1996 for monitoring classroom practice:

> *"The Headteacher is actively involved in teaching, she knows what goes on in classrooms and through discussions with staff she demonstrates her commitment and contribution to improving the quality of provision."* (para. 45)

The LEA review of Bulbarrow (Improving) commented favourably about the management structure and the fact that roles and responsibilities were clearly defined. At Marygreen (Improving), Ofsted reported in May 1995:

> *"There are comprehensive guidelines for the subject* [English]. *English is managed effectively and the co-ordinator's responsibilities includes a monitoring role."* (para. 53)

Marygreen was also praised for the common and systematic approach used to teach spelling and the consistent handwriting style taught throughout the school. However, at Idmouth (Improving) inspectors reported that the monitoring role of the curriculum co-ordinators needed a sharper focus. In January 1995, the inspection team at Casterbridge (Improving) noted:

> *"It is a priority in the School Development Plan that the headteacher should become more involved in monitoring standards on a systematic basis."* (para.136)

It is perhaps not a coincidence that over the next 12 months the adjusted residual of Casterbridge improved dramatically from - 7.2 (three standard deviations below the mean) to -0.7 (one standard deviation below the mean). It would appear that a precondition of improvement is the existence of an infrastructure in which those with a management function have a clear idea of their role and responsibility particularly with regard to monitoring and evaluation.

**The professional background of the headteachers**

The headteachers of both the Improving and Declining schools had remarkably similar career profiles. In terms of age, five out of six of the headteachers of Improving schools were 46 or over and so were four out of the five headteachers of Declining schools. Both groups of headteachers had been in post for a similar length of time, an average of seven and a half years. As noted earlier, Mortimore et al. (1988) found that

the length of time a headteacher had spent in their present post could be linked to effectiveness. Table 9.18 below shows that the spread of the length of service was very similar between the headteachers in each group, and hence length of service does not appear to link with improvement.

**TABLE 9.18**

**The length of time in current headship**

| | 1 year or less | 2 to 4 years | 5 to 7 years | 8 to 10 years | 11 years or more |
|---|---|---|---|---|---|
| **Improving** | 0 | 1 | 3 | 0 | 2 |
| **Declining** | 0 | 1 | 2 | 1 | 1 |

All the headteachers had been in the teaching profession for over 21 years having served in two to three other schools before their present one. All except one had trained in colleges of education and came from a similar spread of subject backgrounds. In terms of professional training or experience, there seemed to be no difference between the groups of headteachers.

**The influence of theory**

The influence of "progressive theorists" such as Piaget, Plowden and A.S.Neill was substantial in both groups, although appeared to be slightly greater in the Improving schools. Table 9.19 shows that they counted for 73 per cent of the influences mentioned by staff in the Improving schools and 52 per cent in the Declining schools. This may link with the stronger commitment in the Improving schools to making learning enjoyable. This picture is not the same as that revealed by the effectiveness outliers; proportionately more teachers in the Least Effective schools appeared to be influenced by Plowden.

**TABLE 9.19**

**Whose ideas on teaching and learning have influenced your beliefs and practice?**

| | | Piaget | Plowden | A.S. Neill | Skinner | No-one | Teachers | Others | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Improving** | % | **33** | **33** | **7** | **0** | **12** | **4** | **11** | |
| | *n* | 9 | 9 | 2 | 0 | 3 | 1 | 3 | 27 |
| **Declining** | % | **24** | **20** | **8** | **12** | **12** | **8** | **16** | |
| | *n* | 6 | 5 | 2 | 3 | 3 | 2 | 4 | 25 |

Unfortunately, there were insufficient headteacher questionnaires completed in the Declining group to justify examining the degree of influence of "progressive" authors such as Piaget and Plowden on headteachers. In the light of this discrepancy, no firm conclusion can be drawn about the influence of progressive theorists on school improvement.

**Development planning**

Most of the outlier schools were complimented by inspection teams on the quality of their planning. Target setting was judged to be well established in three of the four Declining schools but in only two of the five Improving schools. Hintcomb (Declining) was praised by Ofsted in February 1996 for extending target setting to pupils:

> *"There is a culture of improvement and self evaluation which extends to pupils and which results in appropriate targets for development."*
> (para.136)

By contrast the picture was far from uniform in the Improving schools: Bulbarrow's development plan and the process by which it was formulated were criticised by Ofsted for its lack of systematic structure and its failure to include both the staff development and budget plan. The inspection team felt that these weaknesses contributed to the lack of status the development plan had in the school. In January 1995, school development planning at Casterbridge (Improving) was reported to be:

> *"systematic and effective. Targets are translated into action as part of a planned programme of improvement."* (para. 136)

From inspection evidence, the culture of development planning appeared well embedded in at least three of the Declining schools yet their progress was actually deteriorating relative to other schools. Effective planning may therefore be a precondition of improvement, but successfully achieving the targets set out in plans clearly depends on other critical factors.

## The quality of teaching and learning

Ofsted reported deficiencies in the quality of teaching and learning in three of the Declining schools. In Lulwind at Key Stage 2, the quality of teaching and learning was deemed to be at best variable. The quality of teaching at Key Stage 1 was said to have shortcomings in Aldbrickham and Trantridge. In the latter, the teaching of reading was said to be hampered by a lack suitable texts which undermined the motivation of the less able. However, the quality of teaching and learning in the other Declining school, Hintcomb, was found to be sound or better across both Key Stages.

The picture for the Improving schools was equally mixed. Teaching and learning at Idmouth, Casterbridge and Marygreen was reported to be at least sound and often good, but at Bulbarrow the quality of learning in some lessons was undermined by the lack of pace which affected pupils' interest and concentration. At Knollsea, the quality of teaching was reported to be variable. Overall no consistent pattern for the quality of teaching and learning was discernible from the inspection evidence for either outlier group.

## Attitude towards reading scores

Both outlier groups placed a similar value on reading scores as indicators of cognitive development and gave the development of reading skills the same priority in their schools and classrooms. Both groups of schools said they attached similar importance to reading test results as indicators of teacher effectiveness. Therefore, the difference in the progress of pupils in this research project may not be explained by the stated importance attached by the school to the development of reading in that school. The reason may lie in the strategies used to develop reading.

## Strategies used to teach reading

Results from the questionnaire data suggested that both groups used the same range of strategies to help identify pupils with limited reading skills, although the Improving group appeared to make greater use of tests. Both groups used a similar

range of strategies to help poor readers, although the Declining group appeared to make greater use of one to one reading with a pupil. The Declining group appeared to be spending nearly three quarters of an hour a week longer specifically on the development of reading skills although this may be exaggerated by one respondent who claimed to be spending eight hours a week on teaching pupils to read.

The Ofsted reports do not reveal any differences in terms of the strategies said to be used to teach reading. All schools appeared to be using what inspectors described as an appropriate blend of strategies including the use of phonics. Nearly all appeared to be using a structured reading scheme in some form or other. One of the Improving schools, Bulbarrow, was reported as placing a particular emphasis on the use of phonics. Two of the Declining group were praised for the effective use of group work to develop reading. In March 1996, Lulwind (Declining) was reported to have introduced setting by ability in order to raise the standards of the most able and the policy appeared to be succeeding:

> *"The ensuing use of group work, where pupils of similar ability work together on tasks matched to their ability, is having a positive effect upon raising standards in English."* (para. 65)

Trantridge, another Declining school, was also reported to be making effective use of direct teaching and Hintcomb was praised for making good use of whole class sessions.

However, the reports do suggest a differential level of parental involvement. All five of the Improving schools were commended for the way they sought to involve parents. Bulbarrow's report captures the nature of this involvement:

> *" The school actively pursues a policy of consultation with the parents. There are home visits and shared notes of reading progress. Opportunities exist for parents to consult with staff daily on an informal basis when children's progress is shared."* (para.7, June 1993)

At Casterbridge (Improving) children took their books and reading records home each day. At Marygreen a useful booklet for parents had been produced and pupils took their books and reading log books home every afternoon. The headteacher of Lulwind (Declining) revealed in her interview that she did not believe in homework and the

Ofsted report did not mention the involvement of parents. Parents were not mentioned in the report on Aldbrickham nor in the report on Trantridge (Declining). At Hintcomb (Declining), however, the parents were said to be "encouraged" to be involved in their children's reading although no details of how this was effected were given. This finding reflects that of Gray et al. (1998) who found that improvements in effectiveness were significantly correlated with the development of ways to involve parents.

**Conclusions: pedagogical beliefs, practice and school improvement**

Linking values, beliefs and practices with improvement has been the central challenge for this research. The similarities in beliefs and practices between improving schools and those which were declining far outweigh the differences, and this challenges the hypothesis that there were two fundamentally different cultures existing in the outlier groups.

However, a few significant differences have emerged in pedagogical culture and practice which may help to explain why some schools improved their pupils' reading test scores between 1994 and 1996, whilst others appear to have been less successful. Improvement was linked to a stronger commitment to developing writing skills to the full and to the value of testing. A more pluralistic approach to methodology seemed to exist in Improving schools. This was reflected in a stronger belief that teaching would be more effective when a variety of methods were used and a more positive attitude displayed towards the hitherto untried method of Direct Instruction.

Improving schools also had a more effective infrastructure for monitoring and evaluating what happened in the classrooms and the responsibilities of subject leaders seemed to be more clearly defined. Finally, all five of the Improving schools appeared to place a greater emphasis on the involvement of parents in supporting the reading strategies used in the schools. Declining schools in contrast had a stronger commitment to the value of group work and a deeper belief that socio-economic factors were a constraint on pupil achievement.

# CHAPTER 10

## Discussion of Results

*"It became clear in a recent evaluation of primary education in the Netherlands that the biggest problem is not a lack of knowledge about effectiveness, but the realisation of it in educational practice."*

Creemers (1994, p. 124)

This chapter consists of five sections which examine the main issues that arise from the results of this study. The first section explores the implications for school effectiveness and school improvement research issues. The significance of any conclusion hinges heavily on the definitions of both effectiveness and improvement and it is important to remind the reader that these are based on pupil progress at reading measured over a three year period. It could be argued that although such a definition is a valid one, it may nevertheless be a narrow one.

## Section 1: School Effectiveness and School Improvement Research Issues

Section 1 of the discussion will examine the links between the results of this research and four school effectiveness research issues:

(i) The validity of Ofsted judgements about the quality of teaching;

(ii) The importance of classroom factors as an explanation for differences in effectiveness and improvement;

(iii) The significance of the school effect on progress in reading;

(iv) The influence of leadership and its relationship to pupil progress.

### The quality of teaching and progress in reading

The analysis of judgements made by Ofsted about the teaching of English in a number of schools in this study does not provide evidence of much association, and

certainly not a causal link between the Ofsted assessment of the overall quality of teaching, and the extent of pupil progress in reading. In two of the Least Effective schools, the quality of pupil learning was reported as sound or better in almost every lesson observed. In a third, the quality was deemed to range from good to situations where pupil involvement and interest appeared lacking. A similar profile was reported in the Most Effective schools where the quality of learning was described as sound or better in two of the schools, but in another more variable. In its report on the teaching of reading in three London boroughs, Ofsted (1996) made much of the link between the quality of teaching observed by its inspectors and the perceived low standards of reading measured by reading tests. My research supports the view of Mortimore and Goldstein (1996) that the judgements of Ofsted inspectors about the quality of teaching and learning may not be the most secure, and hence the link between these judgements and reading outcomes is perhaps questionable. This disparity between judgements about progress and quality of teaching can be seen in the Annual Report of Her Majesty's Chief Inspector for Schools for 1996/7. Overall progress of pupils at Key Stage 2 was observed to be good or very good in 27% of lessons. By comparison, the overall quality of teaching at Key Stage 2 was observed to be good or very good in 47% of lessons (see Ofsted 1998). Winch (1997) argues that the reason for this difference is to be found in the sphere of methodology:

> *"There is no evidence whatsoever that Ofsted has exercised anything like the methodological care in making judgements nor the caution in pronouncing these judgements that SER has been careful to exercise."*
> (p. 66)

Gray (1998) reached a similar conclusion when he compared the disparity between the judgements of primary inspectors about assessments of pupil performance at the end of primary school, and the assessment of secondary inspectors of pupil attainment on entry to secondary school.[32] He concludes: *"It would appear that inspectors inhabit a different evaluative world from researchers."* (p.13)

The evidence from this research also supports Gray's (1995b) view that judgements about effectiveness should relate to pupil progress rather than absolute

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[32] See Gray (1998) pp. 10-13 for a detailed analysis of anomalies arising from inspectors' judgements of pupil progress.

attainment, and that data upon which judgements are made about effectiveness should span a longer time period, preferably at least three years. Snapshot judgements such as those made by Ofsted (1996), based on the results of one reading test, and which do not take into account prior attainment, cannot provide a valid picture of school effectiveness. If the same approach had been applied to schools in this research then grave errors of misjudgement could have occurred. For example, in 1994 the 8+ mean reading score of King's Hintock, 108.71, was four points higher than any other school in the sample. When prior attainment was taken into account using the 6+ score, King's Hintock's residual placed it 15th out of the 32 schools. However, adjusting the residual on the basis of FSM elevated King's Hintock to third place overall, and hence in terms of residual performance King's Hintock appeared to be a "Most Effective" school. Yet in 1995 and 1996, its adjusted residual suggested otherwise: in 1995 a residual of -1.54 placed the school 24th and in 1996 a residual of -0.35 placed the school 17th overall. The mean residual for the three years 1994-6 placed Kings Hintock in 15th place overall, and in the "Average" rather than the "Most Effective" category which the 1994 raw data originally suggested. These results demonstrate that fine rank ordered distinctions between schools cannot be made using raw results in terms of reading averages, and snapshot judgements based on one year's results do not give a valid picture of effectiveness. Moreover, even using value added approaches, rank ordered distinctions are inappropriate because they fail to take account of the statistical uncertainty attached to the estimates for individual schools, a point also emphasised by Goldstein (1997b).

Whatever the shortcomings of Ofsted judgements about effectiveness or the quality of teaching, the Framework of Inspection (Ofsted 1995b) claims to place teaching and learning firmly at the centre of the inspection process. The next section examines the research evidence for the links between classroom factors and effectiveness.

## The relationship between classroom factors, effectiveness and improvement

The importance of classroom factors in school effectiveness has been well documented (Mortimore 1991b; Scheerens 1992; Sammons et al. 1995c; Sammons et al. 1997b; Gray et al. 1998; Teddlie and Reynolds 1999). In this research, the factor that

correlated more strongly with effectiveness than any other was a classroom factor: a commitment to whole class teaching. The more effective the school, the greater the conviction that children learnt best when taught didactically as part of a whole class lesson. By contrast, teachers in less effective schools, in both the overall and outlier analysis, believed significantly more strongly that children learnt best by doing rather than listening. Sammons et al. (1997b) reported that a combination of teaching approaches, which did not allow one approach to dominate, was related to better pupil performance. However, the data available to Sammons et al. (1997b) was limited because it was based on headteacher rather than teacher questionnaire responses. Also, the focus of the research was on the infant phase where a variety of approaches may be more appropriate. Indeed, Ofsted (1997) challenge the mixed approach used to teach reading in many primary schools. It argued that such an approach to reading:

> *"often overlooks considerable weaknesses in the links between the elements of the "mixed approach". There is an obvious but important difference between an uncoordinated mix of methods and a coherent reading programme."*
>
> (para.19 p.14)

Given the greater maturity of children and the demands of the National Curriculum at Key Stage 2, whole class teaching may be a more effective approach for this phase. Significantly, Ofsted (1998) reported an increase in the frequency of whole class teaching in primary schools aimed specifically at raising standards of literacy and numeracy. This suggests that increasingly more primary teachers have found that basic skills can be delivered more effectively through whole class teaching, and this may explain the value placed on this approach by respondents in Most Effective schools, although it could simply reflect the pressures of Ofsted inspection judgements. However, the review of Sammons et al. (1995c) into the key characteristics of effective schools did not favour one style of teaching over any other, and commented that the issue was not about the label attached to a type of teaching, rather the elements which made up that type:

> *"Indeed, in our view debates about the virtues of one particular teaching style over another are too simplistic and have become sterile. Efficient organisation, fitness for purpose, flexibility of approach and intellectual challenge are of greater relevance."* (p. 25)

In my research, items which produced statistically significant different responses between the Improving and Declining groups of schools also related to classroom practice: the Improving group believed more strongly that teaching was most effective when pupils were regularly tested and when a variety of methods were used. The Declining group had a stronger belief in the value of group work.

To conclude, the evidence from this research suggests that both improvement and effectiveness appear most strongly associated with beliefs that relate directly to classroom practice. However, this does not mean that these beliefs were translated into classroom practice or that this practice equates with improved pupil outcomes. A stronger commitment to whole class teaching does not necessarily mean that this method of teaching was more common in the Most Effective schools, although it would be an interesting research question to pursue. The evidence from Mortimore et al. (1988) suggests that there is often a gap between teacher rhetoric and the reality of what happens in classrooms. Those teachers who said they spent the majority of their time interacting with the class as a whole, when observed spent the bulk of their time communicating with individual pupils or groups. This gap between rhetoric and reality may be particularly significant when considering teacher values and beliefs.

**The significance of the school effect on progress in reading**

Even when contextual factors such as FSM and prior attainment are controlled for, the mean difference between the outlier schools in this study is still substantial in terms of progress at reading between the ages of six and eight. The difference between the mean residual of the Most and Least Effective outlier over a three year period was 9.65 points. The maximum progress made by an Improving school between 1994 and 1996 was 4.22 points and the biggest decline over the same period was -5.43 points. Barber (1997) and Ofsted (1998) argue that a key focus in raising overall standards of reading should be the promotion of greater consistency among schools sharing similar intakes. The evidence from this research supports this view because there were significant differences in effectiveness among schools which operated in similar contexts. The publication by the DfEE of benchmark data based on contextual evidence also suggests significant variations in the performance of primary schools with similar

contextual backgrounds. In schools with up to 50% EAL pupils and 20-35% taking FSM, the percentage of pupils achieving Level 2 or above on the Reading Test ranged from 94% (95 percentile) to 63% (lower quartile). (See SCAA 1997b Table 2, p.10).

It could be argued that disseminating the practice of the Most Effective outliers may be the means to help less effective schools achieve the literacy targets set by DfEE (1997b). However, evidence from this research suggests that this is not simply a matter of publicising good practice. Interestingly, the DfEE (1997c) publication *"From Targets to Action"* contains 20 pages on how schools should set targets and only two pages of strategies which primary schools might use to achieve their targets. The present research suggests that classroom strategies may be more important than setting numerical targets in raising pupil outcomes. Achieving targets may also depend upon changing certain deeply held beliefs about appropriate priorities for primary education. Social priorities can lead to the adoption of classroom strategies that may not be the most effective means of achieving academic targets. For example, the headteacher of Lulwind reported that socialising pupils was an important priority in her school because when pupils first join the school: *"they are rather selfish, precious little people"*. This priority appeared to infuse classroom practice. Both Teachers 1 and 2 of Lulwind reported they frequently used group work because they felt it important that children in their school learnt to work together and respect one another's needs. The shortcomings of group work have been explored by Galton (1980; 1994) and Mortimore et al. (1988). The emphasis given to the development of certain desirable social attributes may partly explain why Lulwind's adjusted residuals placed it in the Declining category of schools.

**The influence of leadership and its relationship to pupil progress**

Although based on a relatively small sample, the evidence from this research challenges the deterministic view that context always impacts on the role of the headteacher and the priorities adopted by schools. The evidence supports the view that those schools which serve low SES catchments are not necessarily distracted from becoming more effective by the need to focus solely on the social and pastoral dimensions of their role. Contextual influences do not appear to have pressured headteachers in this project to embrace a particular leadership role with regard to

instruction. Rather, the diversity in attitude to the role of instructional leader appeared to result from a personal philosophical stance. The 1995 Ofsted report on Aldbrickham, a Declining school yet one with a very favourable catchment areas in terms of SES, [school FSM mean (1994-6) = 7.59% against overall sample FSM mean of 25.35%], commented: *" the pastoral style of leadership inspires loyalty"*, but the report also criticised the school for a lack of effective monitoring strategies. Interestingly, Aldbrickham's adjusted residual declined from +2.03 in 1994 to -1.52 in 1996. In most respects the SES context of Mellstock [school FSM mean (1994-6) = 57.25% against overall sample FSM mean of 25.35%] was significantly more demanding than that of Aldbrickham's and many other schools in this study, yet it was clear that the headteacher had a different perspective on her role as an instructional leader. The headteacher of Mellstock had a more interventionist approach that was not confined to formulating policies, but involved influencing instructional behaviour. In Mellstock, classroom practice was monitored on a regular basis and appraisal was used to support a culture of evaluation. The headteacher used the knowledge gained to encourage team teaching, with less effective staff working alongside the more effective. She appeared to successfully address the particular pastoral demands of a challenging catchment area without diluting her instructional leadership role. Her success seemed rooted in a set of strongly held beliefs and an unyielding tenacity to challenge the deterministic culture in the school. In response to a question about the importance of socio-economic factors as an influence on pupil achievement, the headteacher of Mellstock responded:

> *"The base level where we start from is very, very low, so we have to work harder to take them up there, but having said that, if the hard work's going in, there is no reason why these children should be held back at all. It just takes longer and a lot more effort to get them going; but I would never say, " Oh, our children are not achieving because look at the area", which when I first came here was said to me a million times per week by every member of staff, every ancillary, the whole culture of the school was down. We're at Mellstock, we can't do very well, because look at the children, look at the parents, so it's changing their perceptions and expectations."*

This response indicates that, for the headteacher, raising expectations was seen as a vital step in promoting effectiveness and may partly explain why Mellstock was in the Most Effective school category.

Despite the proactive way some headteachers appeared to embrace the role of instructional leader, the questionnaire data suggested that the influence which headteachers were perceived to have over "instruction" was not related to effectiveness. There was no difference between the two Effectiveness outlier groups in the degree of influence headteachers were perceived to have over teaching methods, nor in the extent to which each group felt that a headteacher should influence teaching methods. The strength of influence of the headteacher seemed similar in the four outlier groups. All had a similar attitude towards the use of comments from their headteacher as a means of evaluating their own effectiveness.

The Declining schools reported that their headteacher influenced teaching methods to a greater extent than teachers in the Improving schools. However, the value added residuals of the Declining schools implied that the influence of headteachers in these schools did not appear to have a positive impact on pupil outcomes. This does not reflect the findings of Teddlie and Stringfield (1993) who found that principals in "effective low SES" schools tended to visit classrooms more and be more proactive in providing instructional leadership. This suggests that the kind of practice which a headteacher is seeking to promote may be more important in determining effectiveness or improvement, than the strength of influence or involvement they may be perceived to have over instructional matters.

Interestingly, the depth of influence of headteachers in general on the methods used by teachers in this research does not appear to have been particularly powerful or long lasting. Only four out of the 77 respondents in this research stated that a headteacher, either past or current, had been the most important influence on their teaching methods. By contrast, over 50 per cent of teachers in both outlier groups reported that colleagues had been their most important influence. It may be that the perceptions of influence are confined to those which make a direct and palpable impact, and that respondents did not perhaps appreciate the importance of the indirect influence which headteachers can have. Hallinger and Heck (1996) argue that leadership influences school effectiveness and student achievement indirectly through a variety of media including school culture. Therefore, the importance of headteachers in this research may have been more critical in the cultural domain where their influence

affected the quality of the learning environment. Headteachers shape the school 'climate' which determines, to a large extent, whether particular types of pedagogical practice thrive or founder. Certainly, the influence of the headteacher of Mellstock appeared to be in the sphere of raising expectations rather than in that of specifying a particular strategy.

An important domain in which the influence of the headteacher appeared closely linked to effectiveness in this research, was the establishment and maintenance of an orderly environment. Poor pupil behaviour was an issue in three out of the four Least Effective schools for which there was interview or Ofsted data available. By contrast, pupil behaviour was praised by Ofsted in the four Most Effective schools for which the same data was available. Interestingly, a greater proportion of respondents in the Most Effective schools advised probationary teachers, about to begin their teaching careers, to establish their authority above all else. The interview data of Teachers 1 and 2 in Mellstock, a Most Effective school, bears testimony to the influence of the headteacher in establishing a more disciplined environment in the school. Other research (see Mortimore et al. 1988) has also shown a strong link at the pupil level, particularly for younger children, between behaviour and attainment levels in reading.

The influence of the headteacher on school culture can also be found in the way a school is managed and the quality of consultation that underpins policy making. The way schools in this research were managed did not appear to differ significantly. All four groups of outliers, in both the effectiveness and improvement categories, were reported by Ofsted to be well led by headteachers who had a strong commitment to consultation. Teacher ownership was evident in the process of drawing up school development plans which were also reported to contain appropriate priorities for the future. The administration of each school was reported to be efficient in all four outlier groups. Therefore, it does not appear that these factors were directly linked with enhanced pupil outcomes. Nevertheless, their relevance may lie in being important preconditions for improving schools or maintaining effectiveness over the long term. For example, at the very least a poorly administered school is wasteful in resource terms, both human and physical, and can undermine even the best of intentions from being realised.

Nevertheless, there did appear to be a marked difference in terms of the degree of monitoring and accountability that existed in the Effectiveness categories of schools. In two of the three Least Effective schools, which were inspected during the period of this research, Ofsted recommended that a more systematic approach to monitoring and evaluation should be established. However, the system of audit and monitoring at Hintcomb, a Least Effective school, was highly commended by Ofsted and was felt to play a key role in the process of development planning. By contrast, the senior management team at Sherton Abbas, a Most Effective school, were criticised by Ofsted for not doing enough to monitor standards of pupil achievement and subject curriculum plans. Yet, the mean residual of Sherton Abbas was 6.1 points higher than Hintcomb's which may cast doubts on the strength of the correlation between monitoring and effectiveness. It may also reflect the issue of context specificity; effectiveness may have been related to other more significant factors in Hintcomb and Sherton Abbas but that monitoring, or the lack of it, may have been more critical in the other schools inspected by Ofsted. It could also suggest that monitoring is only one stage in the improvement process; the actions which result from monitoring and evaluation may have a more direct impact on pupil attainment.

The inspection evidence further suggested that there may have been a link between the quality of mechanisms used for monitoring, in particular the role of senior and middle management, and school improvement. The one significant area of difference between the two groups of improvement outliers lay in the infrastructures that existed for monitoring and evaluation; three of the four Declining schools were criticised by Ofsted for failing to have an effective mechanism for monitoring standards, whereas three of the Improving schools were complimented on the way pupil progress was monitored. The process of monitoring may have reinforced the Improving schools' priorities in the minds of teachers in those schools, and induced a greater sense of accountability for delivering those priorities.

# Section 2: School Culture

Purkey and Smith (1983) were among the earlier school effectiveness researchers to emphasise the overall importance of school culture:

> *"in attempting to build more effective schools, we must abandon our reliance on facile solutions and the assumption that fundamental change can be brought about from the top down. Instead, a more promising notion rests on the conception of schools as functioning social systems with distinctive cultures."* (p. 448)

Section 2 will examine the relationship between certain cultural factors, identified in the literature review as being important determinants of effectiveness, and the evidence collected in this research.

## The significance of appropriate shared goals

One of the challenges facing British teachers are the plethora of goals which society sets for schools which can create a tension between the social and the academic. The academic priorities in the Most Effective schools were regarded as inherently worthwhile in themselves and not as either subservient or inimical to social objectives. The Most Effective did not abandon the social for the academic since there is some evidence to suggest that they appeared to embrace a more holistic concern for the well being of the whole child. This finding supports the assertions of Porter and Brophy (1988), Mortimore et al. (1988) and Watkins (1995) who argue that effective schools do not have to forsake the social in order to pursue the academic.

The fundamental difference between the social goals of the Most Effective and the Least Effective appeared to centre on the content of those goals. The Least Effective valued independence, the intrinsic pleasure of discovery learning, accepting responsibility, developing imagination and, perhaps underpinning all, the promotion of happiness. A teacher whose school remained "average" in terms of reading progress during the period of the research perhaps best expressed the perceived tension between the academic and the social when she wrote:

> *"I am also very wary of anything which would limit children. It is important that children are motivated but that they also have the opportunity to learn freely and to be creative. My aim is to produce balanced pupils with a love of learning. I'm not concerned with feeding them with as much knowledge as possible."*

By contrast the Most Effective appeared to place more value upon hard work and the self esteem which achievement brings. These social goals are more closely attuned to the academic goals emphasised by the Most Effective schools. However, the sharper academic focus in the Most Effective schools was not dulled by the image of Mr. Gradgrind since effectiveness also correlated with the belief that learning should be enjoyable.

Making schools more effective may involve challenging certain deeply held beliefs which appear to dilute a whole hearted commitment to the academic. For example, a blinkered commitment to equality might depress expectations which could have a debilitating effect upon pupil progress. The headteacher of Hintcomb described a problem that occurred in her school when certain social convictions appeared to conflict with academic priorities:

> *"I think there's a strong sort of philosophy of fairness, and everyone must be valued. That's very important, but I think that works against sometimes in teachers' minds, and therefore they are perhaps reluctant to really push some children on further or challenge them. So I think the creation of a nice social togetherness feeling can actually work against academic achievement. I don't think it has to, but I think it can."*

This perceived clash of ideology that possibly afflicted Hintcomb may help to explain why Hintcomb was in both the Declining and Least Effective categories. School effectiveness may ultimately reside in the ideology of teachers, and therefore school improvement may depend in the first instance on changing deeply held beliefs by demonstrating, for example, that the promotion of academic excellence does not conflict with a commitment to equity.

**The significance of a culture that accepts responsibility for pupil outcomes**.

The link between teachers accepting responsibility for pupil performance and effectiveness has been well documented (Clark and Peterson 1986; Porter and Brophy 1988; Lee et al. 1991; Lee and Smith 1996). Teachers in both the effectiveness and improvement outlier schools felt equally responsible for pupil progress or lack of it, and believed that socio-economic factors had a similar bearing on pupil achievement. This research explored this issue from a different perspective by examining the view which teachers had of the impact of external constraints on their effectiveness. They were asked to assess how far 11 variables acted as constraints upon their teaching. A greater proportion of the Least Effective group felt that pupil background, pupil attitude and a lack of parental interest, were more important constraints on their teaching than the Most Effective group. This is perhaps surprising because the social contexts of both groups were very similar and suggests that the Least Effective were more ready to absolve themselves of responsibility by blaming certain outside factors. It may be that this view both contributed to, and reflected, their lack of effectiveness.

Interestingly, teachers in the Improving outlier group also felt that pupil backgrounds, their behaviour and lack of parental interest were a bigger constraint on their teaching than teachers in the Declining group. This suggests that teachers in Improving schools may well view external forces as conspiring against them but this perspective did not appear to inhibit improvement. This may reflect their drive for improvement and their higher expectations in terms of pupil behaviour rather than a culture which externalises responsibility. It may be symptomatic of the frustration and anxiety that a press for improvement brings; progress is never as rapid as one would wish. As Stoll and Fink (1996) observe, school improvement involves not only taking a risk but learning to live with the uncertainty that the risk might not fulfil its promise.

A belief in the educability of all children and an acceptance of responsibility for pupil outcomes may be important ingredients in ensuring that a school's culture is fertile ground for improvement or effectiveness. However, these convictions do not guarantee that improvement will necessarily happen; in essence they remain important preconditions and no more.

## School culture and homogeneity

The importance of consensus about appropriate goals has been well argued (Louis and Miles 1991; Stoll and Fink 1994; Lee and Smith 1996; Sammons et al.1997c). The coherence between school and classroom goals was more evident in the Most Effective schools which may have enhanced their ability to achieve these goals. The mean difference between school and classroom goals in the Least Effective schools was four times greater than in the Most Effective which suggests that school goals may have had greater meaning in the classrooms of Most Effective schools. Effectiveness may therefore relate to the tightness of linkage between school and classroom beliefs and values. However, there was no evidence of differences in terms of tightness of linkage between Improving and Declining outliers and it may be that homogeneity of beliefs is more important in sustaining effectiveness than promoting improvement.

The Most Effective schools also appeared to embrace a slightly broader holistic conception of their goals. Although support was stronger for the development of basic skills, it was also greater for those functions that some would argue are at the margins of a school's responsibility. Three quarters of respondents in the Most Effective schools felt that a goal of the school should be to ensure each pupil used their spare time constructively. Declining schools appeared to have a slightly broader commitment to the overall needs of a child. Although only approaching statistical significance, Declining schools felt more responsible for ensuring pupils had a healthy diet. Embracing a broader set of responsibilities may be feasible in a school which has a culture able to maintain effectiveness, but may not be appropriate in schools who appear to be declining in effectiveness. Perhaps improvement requires a more narrow focus in terms of goals.

A cohesive, homogenous school culture and an holistic commitment to the childrens' needs may contribute to the conditions and expectations that operate in a school, but do not automatically impinge directly on the core business of the school: teaching and learning. As such they can perhaps be viewed as necessary preconditions of effectiveness rather than direct causal factors.

## Section 3: School Culture and Pedagogy

The critical importance of classroom practice has already been argued and so the third part of this discussion will examine those aspects of school culture that appear to relate directly to pedagogy. In particular, this section will address the following two research issues:

(i) The relationship between reported beliefs about pedagogical practice and school effectiveness

(ii) The relationship between reported beliefs about pedagogical practice and school improvement

### The link between teacher beliefs and values, and school effectiveness

The similarities in beliefs and values between the Most and Least Effective schools were far greater than the differences and hence little weight can be given to the idea that two very different cultures existed. However, the pedagogical culture in the more effective schools appeared to reflect a stronger commitment to certain elements of a more academic culture. The correlational data suggests that the more effective the school, the greater the importance attached to certain academic goals, in particular the strength of commitment to ensuring that each pupil developed their reading skills to the full. More effective schools also showed a greater commitment to ensuring pupils acquired as much knowledge as possible, and to the importance of preparing each pupil for the demands of secondary education. Although the strength of these differences was not in every case statistically significant, collectively they lend weight to the notion of somewhat different academic priorities in more effective schools, which may in part explain their greater effectiveness in promoting reading progress. This conclusion reflects the findings of Sammons et al. (1997c) who argue that an academic emphasis in a secondary school is an essential ingredient of effectiveness.

The differences between outlier groups suggested that an academic emphasis extended beyond the realm of goals to beliefs about the efficacy of certain kinds of

pedagogical practice. Although relatively few in number, they do add to the view that there was a slight divergence in pedagogical culture between the outliers although the differences were not as profound or as wide ranging as the 'ideal types' described by Hargreaves, D. (1995) or Alexander (1994, 1995).

Although not extensive, these differences in belief may be significant in terms of pupil progress, since they occurred mainly over practices which research into teaching and learning suggests are critical areas in influencing pupil outcomes. The role of testing, didactic teaching, a subject centred curriculum, ability grouping, were all viewed more favourably in the Most Effective schools where a lack of subject knowledge was also perceived to be a greater constraint on effective teaching. Other research evidence suggests that these practices may help to contribute to effectiveness. Scheerens (1992) viewed regular testing as an important facet of structured teaching since testing is a powerful aid to learning because it gives practice at learning, and also helps to reinforce learning through feedback. Carroll (1989) emphasises the formative value of regular testing since it demonstrates what pupils have learnt and identifies future needs. The academic virtues of whole class didactic teaching have been argued persuasively by Rosenshine (1987), Bennett (1988), Mortimore et al. (1988), Reynolds and Farrell (1996), Smithers (1996), Woodhead (1996) and Ofsted (1997). Mortimore et al. (1988), and in particular Hallam and Toutounji (1996) concluded that there may be some academic benefits when pupils are grouped by ability. Alexander et al. (1992) and Mortimore et al. (1988) have pointed to the positive link between concentrating on one subject in a lesson and pupil progress. However, the results of my research suggest that this stronger 'academic' focus was not at the expense of a degree of pupil freedom nor an eclectic approach to the teaching of reading.

There were some indications that the influence of the ideas of Plowden on teaching and learning was greater among the headteachers in the Least Effective schools, and this may explain the stronger commitment to certain "progressive" practices in these schools such as an integrated topic based approach, learning by doing, and learning by discovery. Other research has raised doubts about the efficacy of these methods (Sammons et al. 1995a; Alexander et al. 1992). An integrated curriculum is rooted in an holistic view of knowledge, one in which pupils can freely explore its

seamless web free from the constraints of artificial subject barriers. Mortimore et al. (1988), Alexander et al. (1992) and Ofsted (1997) have highlighted the organisational demands that an integrated curriculum makes which can limit teachers and pupils to low level tasks. The shortcomings of children working in groups on a range of subjects during any one lesson have also been highlighted by HMI (1978), Galton et al.(1980), Mortimore et al. (1988), and Sammons et al. (1997b). Staff in the Least Effective schools believed that these methods should be underpinned by challenge and clarity of objectives, yet research findings suggest that the organisational demands which an integrated curriculum and discovery learning make, can militate against rigour and clarity.

The nature of the differences between the outlier groups of schools included in this research was not simply liturgical; they appeared to reflect deeper issues of creed. Making schools more effective may not simply be a matter of changing teaching techniques but may require changes in values and beliefs about aspects of pedagogy. A commitment to certain kinds of pedagogical practice appears to reflect much deeper beliefs about the fundamental social purpose of primary education. Changing the culture of a primary school may require reconciling certain social objectives, such as the development of independent learners, equity and the creation of a happy atmosphere, with a stronger academic focus on literacy, regular assessment and whole class teaching.

The debate over real books or phonics as strategies for teaching of reading, has caused two schools of pedagogy to emerge: those who believe in direct instruction and those who believe in a whole language approach. It was expected that these two perspectives would in some way be linked to the effectiveness/ineffectiveness paradigm and represent manifestations of deeper cultural differences. However, it appeared from both the questionnaire and inspection data that most schools adopted an eclectic approach to the teaching of reading. This is in line with findings from a recent study by Sammons et al. (1997b) which reported that most schools used a "blend"of strategies. In my research, the Most Effective and Least Effective schools used a variety of strategies including phonics. There did not appear to be any significant difference in the use of other strategies: two schools in each category were reported by Ofsted to be using commercially produced reading schemes. All schools appeared to favour a

balance of different approaches perhaps best summed up by a teacher at Glaston, the Most Effective school in the whole sample:

> *"What our approach is - we're whole book, real book or whole book, we're Look and Say, we're phonics, we're Letterland."*

Staff were also asked in the questionnaire to describe strategies they used to identify children with limited reading skills. Teachers in Most Effective schools appeared able to recall a greater number of strategies. However, none of the particular strategies showed any significant association with the value added measures of schools' effects on progress in reading. The variety of approaches therefore made it impossible to define a specific pedagogy that correlated reading with effectiveness. This finding raises questions about pedagogical strategies being currently advocated by the "National Literacy Strategy" which started in all primary schools in September 1998. The solution to realising ambitious targets may not solely be achieved by prescribing specific strategies to be implemented during a "literacy hour". The effective teaching of reading is a far more complex issue than a menu of techniques. This research suggests that progress in reading may also be influenced by the broader academic culture of the school which mediates certain values that help to foster the development of reading skills.

**The link between teacher beliefs and values, and school improvement**

The close similarity in pedagogical beliefs and attitudes between the Improving and Declining groups of schools is, perhaps, the most striking outcome of the analysis of responses. However, although the differences in pedagogical culture were few, they may be critically important and help to explain why some schools increased their value added reading test scores between 1994 and 1996. Other research supports the view that differences in attitude to certain priorities and pedagogical practice may well be linked to improvement (Rosenholtz 1989; Alexander et al. 1995; Lee and Smith 1996; Sammons et al. 1997c).

The significantly greater value placed upon testing reported by respondents from the Improving group of schools may explain the increasing success of their pupils as measured by standardised reading tests. Testing is an important aspect of structured

teaching which reinforces learning and its retention. The culture of testing may also ensure that pupils in these schools are more familiar with the issue of time management and the heightened stress which formal testing can create. The increase in residuals in Improving schools, between 1994 and 1996, may simply be due to the fact that these schools began to take the whole idea of reading tests more seriously, and made sure that pupils at 6+ and 8+ were more effectively prepared for them. Gray et al. (1998) found that secondary schools which rapidly improved exhibited a more tactical approach to maximising exam grades by increasing the numbers of entries and providing additional support for borderline pupils. It may be that the Improving group of primary schools in my research viewed testing in a similarly strategic light. Certainly, the dramatic improvement in KS2 English SAT results between 1995 and 1997 in Suffolk cannot be solely explained by improvements in teaching. In 1995 only 48 per cent of pupils in Suffolk primary schools reached Level 4 in the English test component at the end of Key Stage 2; in 1996 the number rose sharply to 60 per cent and in 1997 increased again to 67 per cent. The reason for such a dramatic improvement was explained to the County Council in terms of teachers and pupils becoming more familiar with the test and curriculum[33] and, perhaps, it also reflected the greater priority attached to reading.

Unlike KS1 and KS2 SAT tests, the Suffolk Reading Test uses the same standardised questions year on year. The opportunity for teachers to become very familiar with the Suffolk Reading Test questions is considerable because schools retain the test booklets. It is therefore quite feasible that some teachers may have used this opportunity to "teach to the test". The impact of doing this on the measure of effectiveness used in this research, the value added residual, would have been variable. If it was school policy to "teach to the test" at both 6+ and 8+, then the impact on mean reading scores may have been significant, but not on the difference between the mean scores. The value added measure used in this research was based on the difference between mean scores at 6+ and 8+, and consequently the impact of "teaching to the test" may have been reduced. However, where "teaching to the test" occurred before only one of the tests then the effects on the residual may have been substantial. A high 6+ score (pupils well prepared for the test questions) and a lower 8+ score (pupils not prepared for the test questions) could put a school in the Ineffective or Declining

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[33] See SCC 1997 para. 6.2.

categories; a low 6+ score (pupils not prepared for the test questions) and a high 8+ score (pupils well prepared for the test questions) could put a school in the Most Effective or Improving categories.

It was not possible to determine whether any of the schools in this research prepared pupils differently for the 6+ test than the 8+ test, because this issue was not directly pursued with any of them. The context in which these tests were taken is another means of exploring this issue. At the time the Suffolk Reading Tests were taken, they did not possess the high stakes significance that the SAT tests of 1995 and 1996 did, mainly because the results of the Suffolk Reading Tests were for each school's internal consumption only. Indeed, the degree of support which the Suffolk School Improvement Project received from primary schools during the period of this research was largely due to the clear understanding that individual data was confidential to the school, and would not be put in the public domain. The need to inflate residuals artificially to meet the demands of external accountability did not therefore exist; indeed had the schools done so then the diagnostic value of the data to the school would have been rendered worthless.

It appears that by the end of the research period the culture of testing had become a feature of many primary schools. QCA (1998), in their report on the 1997 Key Stage 2 National Curriculum Assessments, found that in nearly every school pupils were prepared for the Key Stage 2 tests and this often involved the following strategies:

> *"planned programmes of revision in all three subjects, typically including revision of topics covered during the key stage, use of selected questions from previous test papers and practice in writing in a limited time and timed mental arithmetic tests."* (p. 44)

It has not been established whether the same degree of preparation went into the Suffolk Reading Test and perhaps in some schools in this research, improvement may ultimately reflect the way pupils were prepared for the tests and nothing more.

Apart from a lack of enthusiasm for testing, Declining schools were also more committed to co-operative learning than Improving schools, and had a stronger belief in

the value of group work. Shachar and Sharan (1994) found that collaborative learning helped to raise pupil attainment but this view challenged by Galton (1989, 1994) and Ofsted (1995a) who have questioned whether group work can ever provide the same quality of linguistic interaction as whole class teaching. The link between decline in reading scores and emphasis on group work in this research lends weight to the latter view.

A more pluralistic approach to teaching methods appeared to exist in Improving schools which was manifest in a stronger belief in the value of using a variety of methods and a more positive attitude towards the untried method of 'Direct Instruction'. Westerhof (1992) and Hopkins et al. (1994) have suggested that 'Direct Instruction' may be too authoritarian and prescriptive for British teachers. The greater receptivity to new ideas which seemed to exist in Improving schools may have reflected a culture that was more pragmatic than dogmatic. It may also be a reflection of the drive for improvement; the pursuit of raising pupil attainment made these schools more willing to consider new ideas. Their attitude stands in sharp contrast to the cri de coeur of a teacher at Trantridge, a Declining school:

> *"The way in which the National Curriculum has been presented to primary schools (as discrete subjects) and the response that primary schools have thus been obliged to make (subject teaching, being the most obvious), has decimated primary practice. Teachers, in many instances, have become little more than skilled curriculum technicians - delivering a "unit" of this or that to the hapless and bewildered consumer (the child) regardless of the child's interest, prior knowledge, experience or needs. I thought the notion of the child as the "empty vessel" into which we "pour" the knowledge had been ideologically sunk by the Mid-Seventies. Here we are, in 1995, battling daily with its legacy."*

In conclusion, this research project suggests that the attributes of an improving school may be similar but not exactly the same as those of a consistently effective school. It may be that improving pupil reading progress is not simply a matter of changing methods of teaching, but rather of preparing pupils more thoroughly for reading tests and providing feedback about performance. In terms of strategy both the Improving and Declining schools said they adopted an eclectic approach to the teaching

of reading including phonics, although the Declining group appeared to make far greater use of one-to-one reading with a pupil. Both groups claimed to use the same range of strategies to help identify pupils with limited reading skills. Therefore, it appears that a commitment to the value of testing is perhaps as important in raising pupil performance on a reading test, as the strategy used to teach the skill of reading itself. The implications of this finding may be significant for users of reading tests since it suggests that the value of a reading test, both in a summative and diagnostic sense, may be enhanced if pupils are prepared for the test. For pupils unfamiliar with tests, the results may in part reflect a lack of test taking skills rather than their strengths or weaknesses in reading.

## Section 4: The Contribution of the Research Findings towards Theories of School Effectiveness and School Improvement.

**The contribution of the research findings towards theories of school effectiveness**

Theoretical models of school effectiveness (Creemers 1994; Stringfield 1994b; Sammons et al.1997c) have emerged from correlational studies which have spawned lists of factors or characteristics that are linked with effectiveness (Mortimore et al.1988; Creemers 1994; Sammons et al. 1995c). It is not the purpose of this section to analyse the merits of current theoretical models, rather to take certain features of the model developed by Sammons et al. (1997c) and analyse how far the findings of this research project illuminates it.

Sammons et al. (1997c) have developed a multilevel model of seven levels which contains, at particular points, all the various correlates of academic effectiveness. The model is thus a synthesis of both the hierarchical levels approach and the key correlates of effectiveness. Although the model relates to secondary schools, Sammons et al. (1997c) argue that it may also be relevant to primary schools. Here, the influence of the classroom level is likely to be greater, especially in studies of effectiveness over only one or two school years. It is this synthesis of levels and correlates that will be used to

locate some of the findings of this research project. The next section explores the relevance of the research findings to effectiveness at the national and local level.

(i) Level: National

The influence of Plowden and Piaget upon the beliefs and values of many of the teachers in this study appears to have been extensive and, in a number of cases, remarkably enduring over time. This influence is illustrated by the headteacher of Wintoncester, a school whose residual remained average at 0.19 over the three years:

> *"As someone who trained in the early to mid 1960s, the work of Piaget was a major influence on my training. I am aware that his child development theories have been challenged. I would like to think his views are still useful but that teachers approach his theories with a more open mind. As part of a long course I visited A.S.Neill's Summerhill. The principle that children's views matter and are taken seriously is an important one."*

Eleven out of 23 headteachers reported that Piaget had been a significant influence on them; 14 identified Plowden as an important influence on beliefs and practice. This is perhaps not surprising because 75 per cent of headteachers in this study were trained before 1975 when the ideas of Plowden and Piaget were being most actively promoted by teacher trainers. In all, 83 per cent of respondents in this research were trained in colleges of education. Although not statistically significant, there is some evidence that the influence of Plowden may correlate with a lack of effectiveness. The influence of Plowden was greater among headteachers of Least Effective schools which could explain their stronger commitment to certain teaching methods, such as learning by discovery, which Kyriacou (1986) and Alexander (1994) have identified as being a feature of the ideology associated with Plowden.

Therefore, any comprehensive theory of school effectiveness must include the link between the curriculum of teacher training, the values and beliefs of teachers and their pedagogical practice. This in turn must be related to the historical context in which teachers received their training. It seems clear that, like the Plowden Report itself, the values and beliefs of headteachers in this research were in part shaped by the spirit of the age in which they received their higher education. Plowden could be seen to be as much

about developing a social democracy based on individual rights and responsibilities as about raising cognitive attainment levels. As such Plowden is a manifestation of the zeitgeist of its time, of the values and beliefs that had taken hold in the decade that has become a byword for liberalism, the nineteen sixties. Hofkins (1997) comments:

> *"Reading Plowden today can induce a longing for that lost golden age in Britain, one that probably never existed, where there was such a thing as society, and everyone believed in pulling together to solve the ills of poverty, inequality and boring primary schools. In its sparkling optimism and touching belief in social engineering, Plowden was very much of its time."* (p. 10)

(ii) Level: Local

The findings of this research support the view of Stoll and Fink (1996) who argue that a Local Education Authority can contribute positively to school improvement through creating and maintaining the conditions for continuous improvement. A key strategy for LEAs seeking to promote a culture of improvement in their schools is the development of user friendly data that enable schools to evaluate their effectiveness. The first cohort of primary schools that joined the Suffolk School Improvement Project in 1994 improved their value added residuals to a higher mean after three years than those cohorts which joined the Project later. There is some evidence from this research project that the provision of data by Suffolk LEA, its networking conferences and support, contributed to the improvement culture in some of the Most Effective schools. The DfEE publication *Excellence in Schools* (1997a) envisages an enhanced role for LEAs in promoting school improvement; the evidence from this research project suggests that this could have a positive impact on school effectiveness.

**The contribution of the research findings towards theories of school improvement**

Stoll and Fink (1996) have developed five 'ideal types' of school culture which have a differential influence on school effectiveness and the capacity of schools to improve. Each 'ideal type' is drawn from aspects of school culture which they perceive as critical to the effectiveness / improvement paradigm. Stoll and Fink do not make great claims for this model, and perceive it as a template to stimulate discussion among those seeking to improve schools.

The evidence from this research project suggests that this typology could be usefully developed further to embrace the pedagogical cultures of schools. The research instruments used in this project were not refined enough to locate each of the five types of school culture. However, the outlier framework of Improving and Declining schools would fit at least two of the Stoll and Fink 'ideal types.' The Improving schools fit the criteria for *'Moving schools'* but the location of the Declining schools is less clear. Certainly, they could not be classified as *'Sinking schools'* or *'Cruising schools'* because they are seeking to improve. Declining schools could not be classified as *'Strolling schools'* since they are hardly average schools because their residuals show a significant decline. Perhaps the definition of *"Struggling schools"* comes closest to the plight of the Declining schools; they wish to improve but culturally they lack the means to do so. The path to their improvement may lie in confronting and changing the pedagogical culture in the school.

The typology of school cultures devised by Hargreaves, D (1995) includes elements of pedagogy: among the characteristics of the '*traditionalist*' culture are pace, high expectations, frequent testing and regular homework; the '*welfarist*' school culture is characterised by a child centred philosophy in which academic goals are neglected in favour social cohesion goals. Hargreaves points out that few school cultures would actually fall exactly into any of these ideal types. However, they provide a useful analytical framework against which to test, and possibly refine, a model that could be linked to the Moving /Struggling model of Stoll and Fink. Certainly, the characteristics of the *traditionalist* and *welfarist* cultures contain some features of the Improving/ Declining framework used in this research but the differences are nowhere near as stark as the Hargreaves model. Both groups of outliers contained features of both ideal types. It may be that the *traditionalist / welfarist* labels are too value laden, and perhaps redolent of a bygone era of grammar schools, to reflect accurately the small number of differences in culture that existed between the Improving and Declining primary schools.

Some differences were identified in this study but they are far from all embracing as the models of Stoll and Fink and Hargreaves suggest they should be. The differences are located on a continuum from a child centred to an academic focus which infuses not

just goals and pedagogy but leadership. The Stoll and Fink (1996) model could be embellished by a pedagogical dimension thus:

(i) Moving schools

> The residuals of these schools show a year on year improvement which are significantly above the mean. They believe strongly in the value of testing and a pluralistic approach to methods of teaching and learning. They place a great emphasis on the involvement of parents in helping to achieve the academic goals of the school and have a clearly defined monitoring infrastructure.

(ii) Struggling Schools

> The value added residuals of these schools show a year on year decline but these schools wish to improve and have joined a school improvement project. They believe they are heavily constrained by external factors and are strongly committed to the value of groupwork. The headteachers are less interventionist and more laissez faire.

The value of these idealised typologies perhaps lie in the questions they pose to aid school self-evaluation rather than the reality they represent. It could also be argued that the same is true of the key characteristics models developed by school effectiveness researchers.

## Section 5: The Contribution of the Research Findings towards a Theory of School Effectiveness and School Improvement at the Classroom Level.

The implications of the research findings for theory at the national and local level have already been examined. The final section of this chapter attempts to use the research findings to develop an integrated theory of school effectiveness and school improvement at the classroom level. The first part of this section explores some of the common ground that the two paradigms share.

### School effectiveness and change

The differences between school effectiveness and school improvement research have been examined in Chapter 2 (pp 51-4). Gray et al. (1995c) point out that there are few studies which have attempted to link the two paradigms largely because of methodological difficulties. Huber (1998) describes a fundamental weakness of much SER which inhibits the development of a synergy with school improvement:

> *"What is clearly missing in school effectiveness research is the process of change itself. School effectiveness studies only show a 'snapshot' of a school, a static picture of school at a point in time, or show the end state of what is desired in terms of correlations with 'high outcome.' An evolutionary and moving picture of school over time is missing."* (p. 10)

This research attempted, albeit in a modest way, to address this issue. Effectiveness was measured over time by using residual data garnered between 1994 and 1996. It was therefore not a static commodity. The snapshot came from questionnaire data and interview data gathered at roughly the mid point (May-June 1995) of the period the quantitative data was collected. The focus of the data was a central mechanism in the process of change: pedagogical culture. This research was based on the assumption that pedagogical culture is one of those key factors that contributes to school effectiveness and facilitates school improvement. The results of this research suggest that this premiss was valid and thus pedagogical culture provides a modus operandi for linking the two paradigms.

## School effectiveness and pedagogical culture

In many respects, the unifying focus of pedagogical culture also helps to provide an answer to critics such as Huber since elements of school culture contain the dynamic of effectiveness. For example a culture rooted in "a determination to achieve" (see Scheerens 1992) may be a consistent feature of effectiveness but the concept itself is a dynamic one since it encompasses a relentless search for improvement. Effectiveness over time, although in a statistical sense it appears a stable commodity, in reality it certainly is not. Analogies of snapshots and landscapes obscure the true nature of school effectiveness. The single frame captured by school effectiveness research is usually one of motion and pent up energy frozen at a point in time with movement both preceding and following the release of the shutter.

The dynamic nature of the concept of school effectiveness used in this research is illustrated by those eight schools which remained in the Most Effective category during the three year period covered by this research. The mean reading score of the 32 primary schools, at both 6+ and 8+, increased during the three year period of this research.[34] Therefore, to remain in the Most Effective category, the eight schools not only had to improve their pupils' reading scores between 6+ and 8+, they had to improve them at a faster rate than other schools. Their cultures possibly contained certain dynamic elements that fuelled the capacity to develop reading skills at a faster rate. Thus the definition of effectiveness used in this research could not be described as a static one and this addresses the concern of Reynolds et al. (1993) who argue for:

> *"a dynamic, evolutionary, evolving and 'change over time' orientation within school effectiveness research."* (p. 51)

## School improvement and pedagogical culture

It is also possible that the culture of improving schools was the source of their momentum and this research suggests that their ability to improve at a faster rate than

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[34] In 1994, the 6+ mean reading score of the 32 schools in this research was 95.11, in 1995 it had increased to 97.88 and in 1996 increased further to 98.59. In 1994, the 8+ mean reading score of the 32 schools in this research was 95.27, in 1995 it had increased to 96.56 and in 1996 increased further to 96.93.

other schools lay in certain critical features of their pedagogical culture.[35] However, the differences in beliefs between Improving and Declining schools were remarkably few and this tends to challenge the existence of very different cultures. The kind of debilitating culture documented by Reynolds (1996a)[36] did not appear to exist in Declining schools. This lack of clear differences can be explained in a number of ways:

(i) The difficulty in creating improving and declining outliers. Model H contain criteria that had to be developed in order to establish viable outlier groups. As Gray et al. (1995c; 1998) argue, the overall stability of school effects means that over a three year period very few schools consistently improve or decline. Outlier studies of the type used in this research are almost bound to be heavily constrained in a numerical sense, although together the Improving and Declining schools accounted for 41% of the total sample in this study.[37] It should also be pointed out that the statistically significant correlations were obtained from the respondents in all 32 schools in the study (see pp. 200-1). These correlations suggested an association between Improving schools and a greater commitment to the value of testing as well as to the development of writing skills and the use of a variety of teaching methods.

(ii) Gray et al. (1995c); (1998) suggest that improvement or decline may be context specific and that the search for common factors between schools is likely to be fruitless; therefore, "a *'situated' understanding of change may be required*" (p.237). The answer to concerns about the slender evidence base, and the context specificity of the findings, may simply be the test of reasonableness. The fact that Improving schools in this research project had a more positive attitude towards testing seems a perfectly valid explanation for why they seemed to be doing better than Declining schools. It would be wrong to regard this kind of strategy as "situated" and relevant only to particular schools since it would be difficult to argue that a greater commitment to testing would not be an important

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[35] To validate the enduring influence of aspects of this culture and its ability to help certain schools to stay ahead of others, it would be interesting to use again the same research instruments with the original 32 schools. The statistical data for 1997 is readily available.

[36] See Reynolds (1996a) pp. 153-5

[37] There were seven schools in the Improving category (22%) and six in the Declining category (19%).

strategy for any school regardless of context, particularly when public accountability increasingly hinges on performance on tests.

(iii) The number of differences which appeared to exist between the effectiveness outliers was greater than the number identified for the improvement outliers. This may reflect the fact that effectiveness and improvement are not necessarily shaped by the same critical factors. Maintaining effectiveness over time may require a broader portfolio of strategies. A focus on testing may be particularly important in generating an improvement culture particularly if the use of testing leads to better reading scores. Progress may help to ring changes in expectations that may come from the realisation that the school can actually improve matters, that there are things that can be done which can transcend contextual constraints. The sense of empowerment which stems from demonstrable progress may help create the momentum to further change pedagogical practice and beliefs, and sow the seeds of effectiveness across time. A belief in the importance of testing may be a first step towards unlocking the doors to improvement and effectiveness.

(iv) The absence of a number of clear differences may also reflect a methodological weakness associated with the use of a correlational approach to interpreting the data. Critics of the correlational approach used in school effectiveness research have argued that the data can only ever point to an association and not causality (see Angus 1993, Davies 1997, Huber 1998). Similarly, it has been argued that factors associated with effectiveness could be the consequence rather than the cause of effectiveness. This may be true of some of the factors associated with effectiveness such as 'high expectations' or 'pupil rights and responsibilities'[38] but not necessarily of every factor. Applying the logic of the 'consequence rather than cause' argument to the results of this research, it could be posited that the factor of 'testing,' which was found to correlate with improvement, may be a result of improvement rather than a cause. However, the concept of testing describes a process that leads to an outcome rather than an outcome per se and

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[38] These two factors have been taken from Sammons et al. (1995c) *no. 6 High Expectations; no.9 Pupil rights and responsibilities*

to imply that testing is a simply an outcome of improvement seems a non sequitur. It may be that testing is a cause of improvement and an outcome since the educational benefits of testing are well documented.[39] As testing leads to improvement so it becomes a feature of improving schools.

Pedagogical culture is thus a feature of both the dynamic of effectiveness and the source of school improvement. Consequently, it can represent a means of linking the two paradigms. The next section develops a model that integrates both fields of enquiry at the classroom level by using pedagogical culture. The main features of the model are drawn from the findings of this research project and other research into school effectiveness and school improvement.

**Building a model of academic effectiveness that links school effectiveness and school improvement at the classroom level.**

Theories of school effectiveness that integrate classroom factors with broader school and contextual factors have been developed by Scheerens (1992), Creemers (1994) and Stringfield (1994b). These models are attempts to collate features of effectiveness under broad headings, such as school factors or classroom factors, but with little attempt to examine the flow of influence, or indeed the relative importance of each factor within their overall descriptors. In essence, these models are pictorial representations of what works rather than how, or indeed why, these factors work. Consequently, these models offer little to those seeking to bridge the divide with school improvement research. The findings from this research project offer a glimpse of a model that may begin the process of integrating certain key aspects of school improvement and school effectiveness research at the classroom level.

Both paradigms point to the centrality of the classroom experience in determining the quality of pupil outcomes. The overarching dimension which embraces both fields of enquiry is the concept of pedagogical culture and, in particular, its roots in the values and beliefs of teachers. It is this factor which is the ultimate source of many of the effectiveness correlates and those process factors which are the quarry of much

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[39] See Chapter 2 pp 98-101of this research

school improvement research. The central focus of teacher beliefs and values helps school effectiveness and school improvement research answer critics such as Angus 1993; Elliott 1996; Hamilton 1997; Davies 1997, who argue that both paradigms are essentially mechanistic and systemic because they ignore the power relationships which underpin the cultural milieu of a school. Davies (1997) argues persuasively that this is often the reason that difficulties have been experienced when SER has been used to promote improvement:

> *"The hardest part for policy makers has been the attempt to turn school effectiveness into school improvement; the power of the inhabitants to interpret and subvert this world is one of the key reasons for this."*
> (p. 36)

Because of its link with beliefs and values, pedagogical culture is essentially a concept that reflects empowerment and both individual and collective ideology; as such it provides a valid starting point for a model which operates at the level of the classroom, and unites aspects of both effectiveness and improvement.

**The main dimensions of pedagogical culture**

In terms of the model developed in this research, pedagogical culture consists of values and beliefs that appear to exist in three dimensions:

(i) A philosophical level. They reflect deep seated convictions about the aims of education and the priorities of schools in general.

(ii) A psychological level. They reflect certain perspectives on human nature and how people learn.

(iii) A pragmatic level. They contain 'craft' knowledge about what works best in particular circumstances.

This research project suggests that these three dimensions of pedagogical culture combine to shape two important elements of classroom practice:

(i) The preconditions which establish a climate in which teaching and learning can flourish;

(ii) The choice of appropriate strategies for teaching and learning to be of maximum effect.

**Academic preconditions**

Figure 1 below is a pictorial representation of this model and shows the relationship between pedagogical culture, academic preconditions and appropriate strategy. The first dimension of the model, academic preconditions, is based on the assumption that there are a number of factors which have been identified by this and other research as essential prerequisites for effectiveness or improvement but which, on their own, do not impact directly on the quality of pupil outcomes. The preconditions set out in Figure 1 are derived from those correlates which the findings of this research suggest are associated with academic outcomes. The preconditions set out in Figure 1 are as follows:

- Shared goals which reflect a consensus among staff about the aims and values of the school.* [40]

- Tight cultural linkage which reflects the impact of the aims and values of the school on practice in the classroom. There is little dissonance between school aims and the beliefs and values which inform the pedagogical practice of teachers in the school.*

- An academic focus in which the development of reading skills and the acquisition of knowledge are given a high priority. The social goals of the school, for example raising pupil self esteem, are achieved through this academic emphasis and, at the same time, support it..

- An orientation towards secondary education. Staff place a high priority on preparing pupils for the next phase of their schooling.

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[40] See explanation for asterisk on following page

- An acceptance of responsibility for pupil outcomes combined with a belief that teachers can make a difference to the life chances of their pupils.*

- Effective leadership which is purposeful, efficient and believes strongly in the value of consultation and collaboration with key stake-holders in the school.*

- Established monitoring and evaluation structures which focus on pupil progress.*

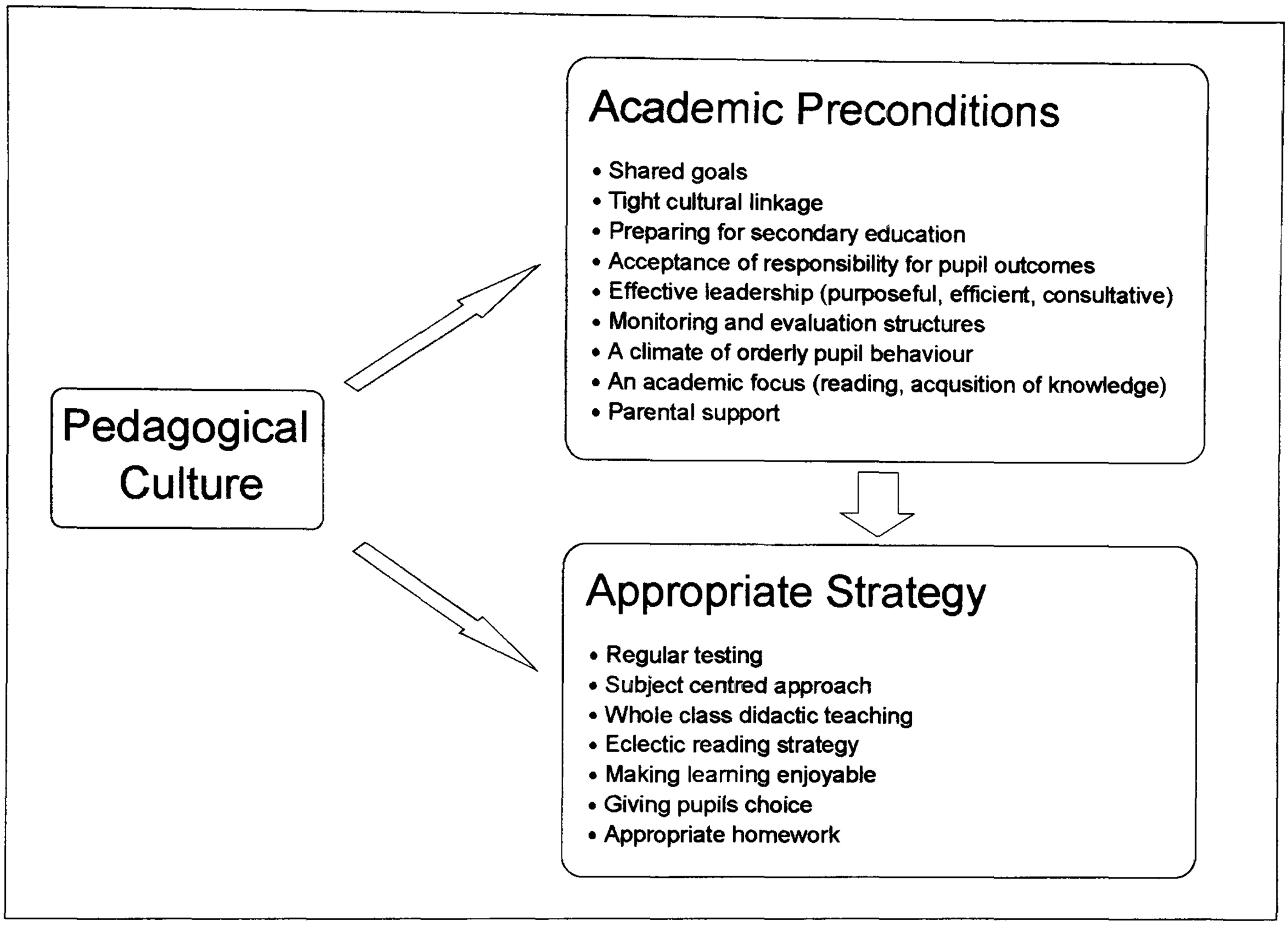
- A climate of orderly pupil behaviour in which learning can flourish free from disruptive behaviour.*

- The full involvement of parents in supporting the academic aims of the school.

The definitions of effectiveness and improvement used in this academic model could be broader than the cognitive focus used in this research. The model could encompass the non cognitive as well as the cognitive. The preconditions set out in Figure 1 are exemplars of the preconditions necessary for cognitive outcomes. However, it could equally be argued that six of the nine preconditions set out in Figure 1 are also essential for the effective development of non cognitive outcomes. These have been indicated in the list above with an asterisk. Nevertheless, further research would also be required to establish whether other preconditions would need to be added for non cognitive outcomes.

**FIGURE 1**

**A diagram to show the link between pedagogical culture, academic preconditions and appropriate strategy in relation to progress at reading**




**The link between pedagogical culture and academic preconditions**.

Preconditions create the climate for growth; they emanate from deeply held convictions and are expressions of the pedagogical culture of the school. They reflect deep seated beliefs about the aims of education and the purposes of schools in general. They are also based on particular views of human nature, which in turn are reflected in a commitment to certain kinds of structure and organisation for teachers and pupils.

The flow of influence between pedagogical culture and academic preconditions is therefore one way, since the latter result from the former. If the values and beliefs that

lie at the heart of the pedagogical culture change, for example by a greater priority placed upon the social development of pupils, then the content of some of the academic preconditions will change. However, the academic preconditions cannot change the pedagogical culture because of their a priori relationship.

The direction of the link between culture and preconditions suggests that those who wish to change schools may need to first change some of the fundamental tenets which lie at the heart of the pedagogical culture of a school, rather than focus solely on the academic preconditions as the IQEA project (Hopkins et al.1996) appeared to do. Moreover, addressing the issue of the academic preconditions may be the first step to greater effectiveness but will not necessarily make any difference to pupil learning. The academic preconditions create the climate for improvement and sustained effectiveness but no more. For example, establishing a monitoring structure which focuses on pupil learning and which evaluates progress will create a sense of teacher accountability but, unless some action results from the data collection and analysis, the exercise will probably not make any impact on teaching or learning. In order for these climate factors to have any influence on pupil outcomes, they need a further series of critical strategic factors to operate.

**Appropriate strategy**

The second dimension of the model, appropriate strategy, results from specific decisions that are again rooted in the values and beliefs of teachers and headteachers. The selection of the right strategy and its application ultimately determine the quality of pupil outcome. The teaching strategies listed under appropriate strategy are those which the findings of this research suggest are linked with pupil progress:

- A subject centred approach to delivering the curriculum with a premium placed on staff subject expertise.
- Whole class didactic teaching in which teacher and the whole class interact for a significant proportion of a lesson.

- An eclectic reading strategy which uses a variety of approaches to teach the skills of reading.
- Regular testing which provides summative and formative feedback to pupils.
- Setting relevant and appropriate homework to support and extend learning.
- Structuring learning so that pupils are given some degree of choice.
- Structuring learning experiences so that pupils enjoy learning.
- Encouraging an active level of involvement by parents.

It is in the arena of appropriate strategy that intricate and complex interactions with the preconditions occur. The factors detailed under preconditions and appropriate strategy are those which are most likely to promote academic outcomes. For example, the findings of this research suggest an academic culture with a high value placed on knowledge and teaching literacy skills is likely to favour the use of whole class didactic teaching and the use of testing. However, if the objective changes then so would the strategy. For example, a focus on the non cognitive could lead to the precondition of valuing the development of independence. This in turn would probably lead to the strategy of discovery learning being adopted as an appropriate means of realising this focus in the classroom.

**The link between academic preconditions and appropriate strategy**

Because a commitment to the teaching and learning strategies identified in Figure 1 appears linked to either effectiveness or improvement, the term strategy has been qualified by the addition of the concept 'appropriate.' As has been mentioned, if the goals in the preconditions were to change, then the strategy would change and would relate to the goal. For example, the goal of developing a social skill such as the ability to cooperate with others, could lead to consideration of the strategy of group work as a means of realising this social skill. Therefore, the term 'appropriate' implies the selection of a strategy that will reflect the priority set out in the preconditions. Consequently, because of this sequential link, the flow of influence is one way and runs from the preconditions to the strategy. If the flow of influence was the other way, from

strategy to preconditions, then it would assume that the selection of the appropriate strategy was an arbitrary event that was not rooted in any rational decision making process, which this and other research (Shulman 1986; Cooper and MacIntyre 1994) shows is not true.

**The link between pedagogical culture and appropriate strategy**

Deeply held values and beliefs about the purposes of education clearly influence academic preconditions, and they also exert a similarly direct influence over choice of strategy. Pedagogical culture operates on a practical level because it contains beliefs about what constitutes appropriate strategy which in turn are shaped by those influences indicated in Figure 3 (see p. 259). For example, the decision to use whole class didactic teaching is shaped partly by the academic focus in the precondition; partly by those elements of the pedagogical culture that contain beliefs about human nature and partly by beliefs about the efficacy of whole class teaching as a means of enhancing cognitive outcomes. The flow of influence between pedagogical culture and appropriate strategy is one way because culture is the source of the decision making process, the strategy is simply the result of the decision. To reverse the link would create the same paradox as that already described if the link between culture and preconditions was reversed.

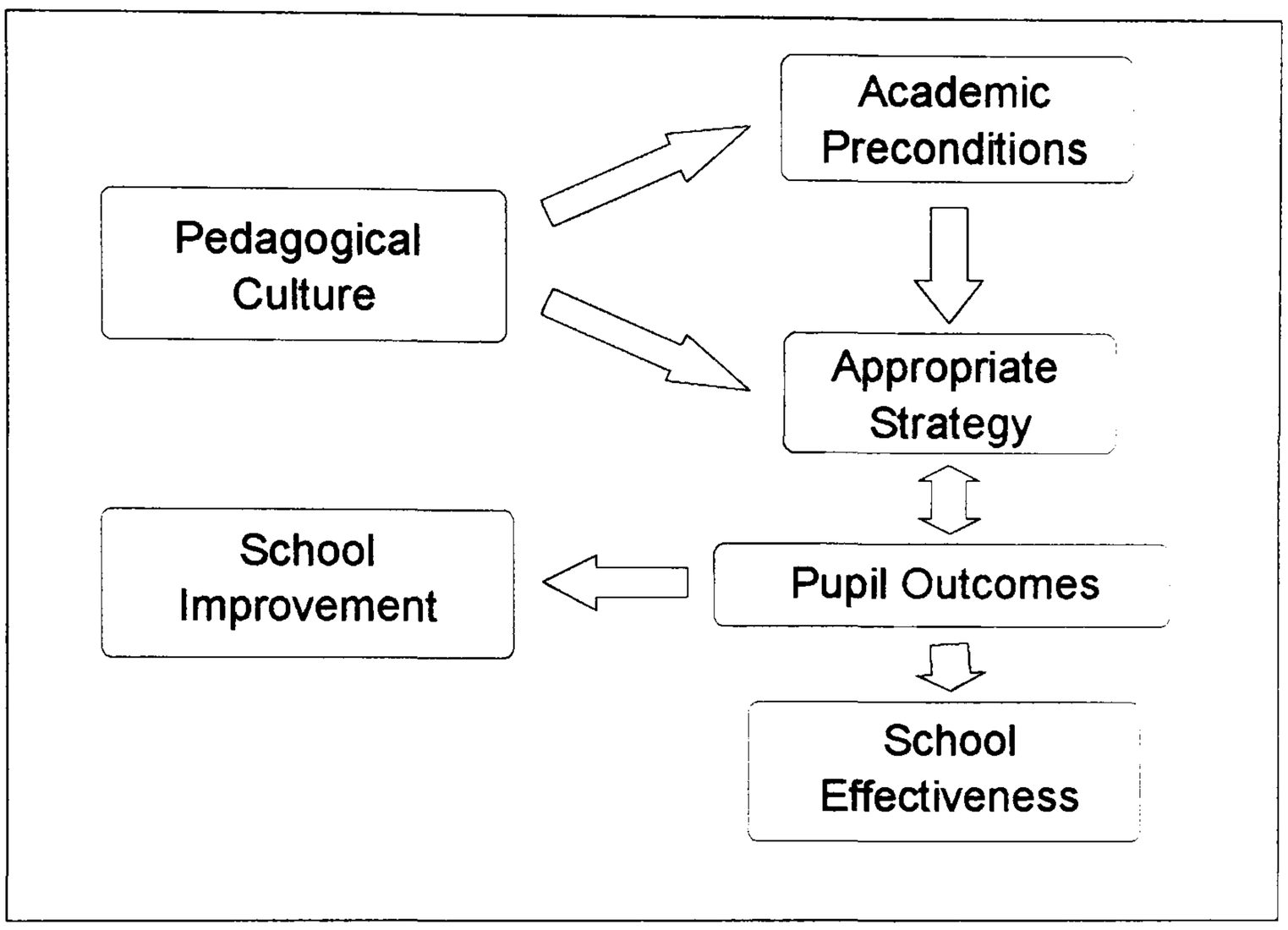
**Developing the model: the link between appropriate strategy and pupil outcomes**.

The model has been developed further in Figure 2 and the link between pedagogical culture, the academic preconditions / appropriate strategy dimension and pupil outcomes has been established. The link between appropriate strategy and pupil outcomes is shown as a symbiotic relationship. The existence of a monitoring and evaluation structure as an essential precondition assumes that pupil outcomes provide a feedback loop into strategy and its appropriacy. There may also be a link back into the pragmatic dimension of pedagogical culture; 20 per cent of staff in the four outlier groups of schools in this research pointed to the importance of SAT results in gauging their effectiveness as teachers. However, evidence was not collected to determine whether these results had any positive or negative influence on their subsequent beliefs about effective pedagogical strategy although they may have done so.

The model has been developed further by links being made between pupil outcomes, school effectiveness and school improvement since the latter are defined by pupil outcomes.

**FIGURE 2**

**A diagram to show the links between values and beliefs, and school effectiveness and school improvement in terms of reading progress**



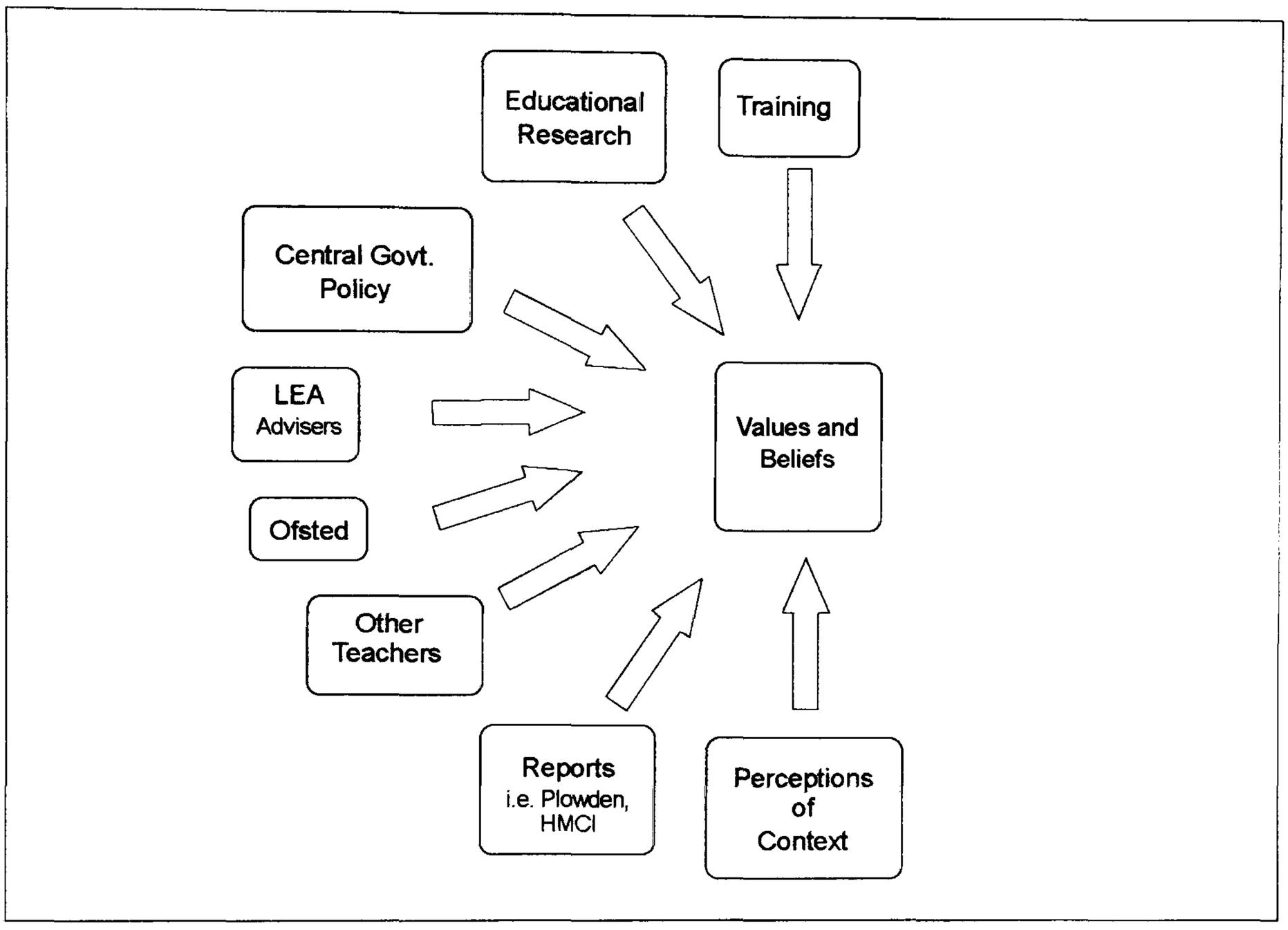

**Influences on pedagogical culture**

The model is completed by adding those factors, identified by this and other research, that influence the values and beliefs of teachers and therefore ultimately the pedagogical culture of the school (see Figure 3 below). The two dimensions of the model represented in Figures 1 and 2 are confined to the classroom level but of course the values and beliefs of teachers are shaped largely by factors which are outside the classroom level. Reference has already been made in Chapters 9 and 10 of this research to the influence of LEA advisers, teacher training, educational reports such as Plowden and researchers such as Piaget. Teachers in this research also acknowledged the importance of other teachers and their own experience in shaping their beliefs. Equally, some acknowledged the importance of major changes in central government policy such

as the National Curriculum and the influence of the Ofsted system of inspection and its associated framework for teaching.

**FIGURE 3**

**A diagram to show the sources of influence on values and beliefs**




However, it would be wrong to view teacher beliefs and values as the only significant factor in shaping pedagogical practice. Pollard (1980) argues that teachers have to cope with structural pressures and constraints that emanate from the social context of the school and classroom, and therefore teacher perceptions of the context of a school have been included in Figure 3 as a factor which shapes the pedagogical culture of the school because there is evidence from this research that perceptions of context may have influenced values and beliefs in a pragmatic sense. Certainly, a significant proportion of staff in Least Effective schools believed that children's background and lack of parental interest were constraints on teaching. There is little evidence to suggest they were correct. The academic culture in schools, such as Mellstock which had higher than average numbers of pupils eligible for free school meals, was just as strong as in

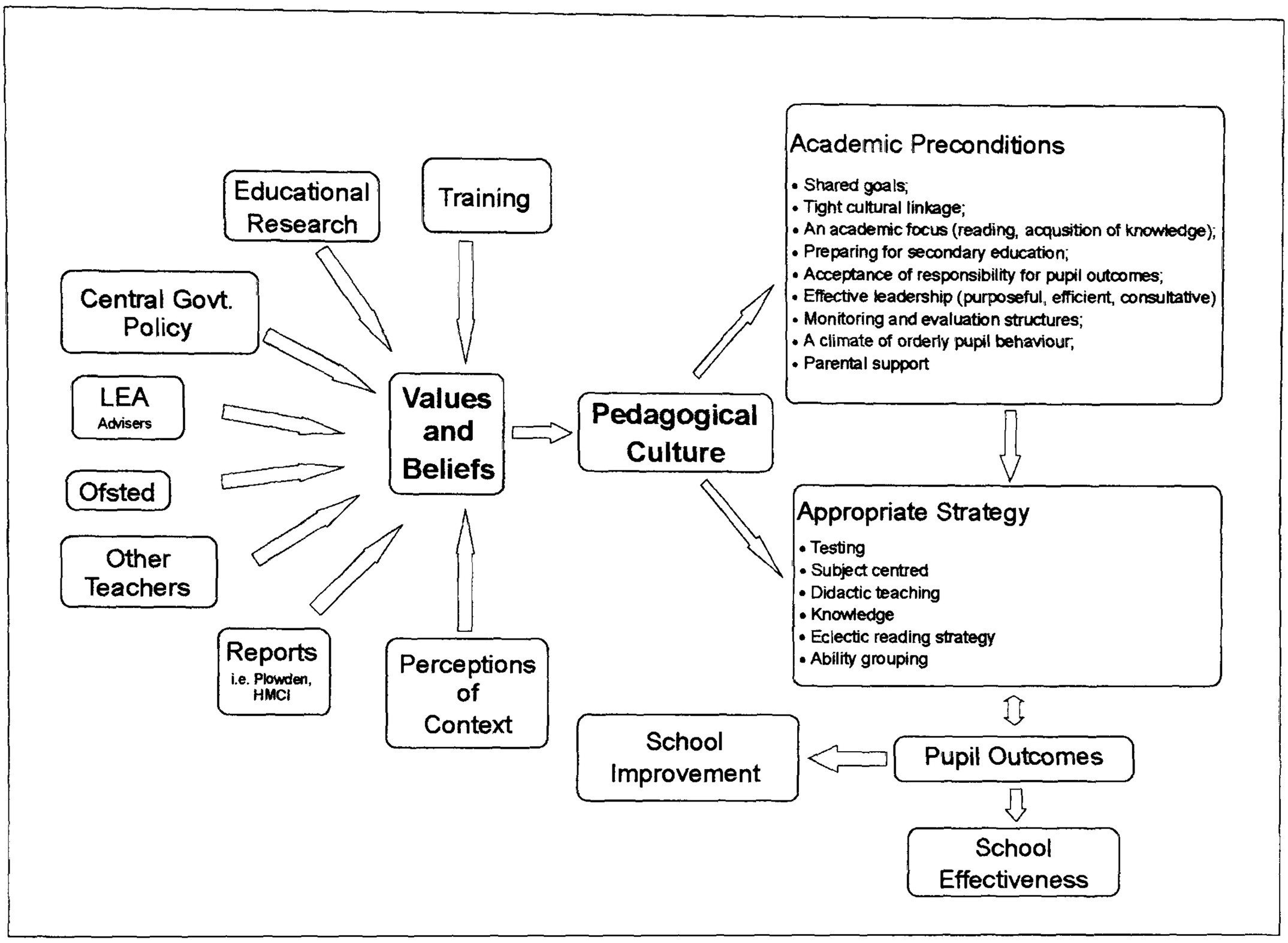
schools, such as Knollsea, which served socially advantaged areas. However, the research questions focused on perceptions rather than their veracity. Therefore, it is reasonable to assume that certain aspects of pedagogical culture were influenced by teacher perceptions of certain contextual constraints.

Those who seek to raise levels of pupil achievement in schools ignore the power of these frequently conflicting influences at their peril. The model deliberately does not set these influences in any sort of hierarchy since their influence is not of any graduated nature. Rather they are viewed as essentially competitive and often engaged in a dialectical conflict. How this conflict is resolved shapes the nature of classroom practice and ultimately the quality of pupil outcomes.

Finally in Figure 4 the three elements outlined above are combined to produce a pictorial model of the classroom dimensions of school effectiveness and school improvement.

## FIGURE 4

**A model of school effectiveness and improvement at the classroom level**




## Conclusions

The model does not claim to be comprehensive in any sense rather it should be viewed as a legitimate attempt to pay due respect to the power and importance of the perspectives of classroom teachers in both the effectiveness and improvement paradigms. Too much research in this sphere consigns the classroom teacher to the role of impotent operative or innocent bystander. The latent passion that underpinned much of the interview data collected in this research, combined with the strong commitment to professional autonomy, suggested very much the reverse. The reaction of Teacher 2 of

Lulwind (Declining) to Direct Instruction represents the sentiments of a number of respondents:

> *"I think I would rebel against it. I like to be a bit more autonomous and be able to be flexible and do things as I see they need to be done within my classroom, and respond to what's going on at the time. I would find something like this* [Direct Instruction] *too constraining."*

The model of school effectiveness and improvement that has been presented in this research is an attempt to acknowledge the crucial role which the deep seated perspectives of teachers play in both paradigms. It may serve as a timely reminder to those such as Reynolds (1997) who criticise teachers for their reluctance to *"embrace the new technologies of teaching"* (p. 109) and argue that the fruits of research into teacher effectiveness needs to be made more relevant to those teachers who are mainly concerned with issues of 'craft' knowledge. This model suggests that decisions taken by teachers will not be changed simply by offering a new menu which contains correlates of effective practice, but by challenging some of those complex fundamental beliefs that provide the template against which new ideas are judged.

# CHAPTER 11

## Conclusions and Recommendations

*"Schools, and especially classrooms, are remarkably resistant to change, much to the consternation of politicians, policy makers and innovators. This is a difficult, bitter and costly lesson for reformers - and one, apparently, that every reformer has to learn anew..... Professional and institutional cultures are resilient; they withstand many an assault and have powerful capacities to maintain and reproduce themselves despite surface changes."*

(Hargreaves, D. 1994, p.12)

Much of the recent British research into school effectiveness has focused on secondary schools (e.g. Rutter et al. 1979; Willms 1986; Willms and Raudenbush 1989; Blakey and Heath 1992; Cuttance 1992; Jesson et al. 1992; Sammons et al. 1994; Gray et al. 1995; Sammons 1995; Thomas and Mortimore 1996; Hill and Rowe 1996). Relatively little British research has focused on primary schools, and among those that have, some may be technically flawed. The influential review of standards in primary education, carried out by Alexander et al. (1992), concluded that the data on trends in pupil achievement was inadequate. Despite this limitation, they claimed there was an association between a decline in aspects of literacy and certain kinds of classroom practice in primary schools, although they failed to provide any statistical evidence to substantiate such a link. The remaining database of recent research into primary education is methodologically far more secure but is neither extensive nor nationally representative. Of nine studies recently completed (see Appendix 31 for a detailed summary), six have used data from inner London[41] (Mortimore et al. 1988; Sammons et al. 1993; Sammons et al. 1995b; Goldstein and Sammons 1997; Sammons et al. 1997b; Strand 1997), and of these, four have used the JSP dataset which was collected from 1980 to 1984 (Mortimore et al. 1988; Sammons et al. 1993; Sammons et al. 1995b; Goldstein and Sammons 1997). Two of the remaining three studies are based on Scottish primary schools (Bondi 1991; Sammons et al. 1998;). The 32 primary schools

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[41] In 1990, only 14% of schools catering for primary age children were located in inner city areas. Of these two thirds had significant proportions of disadvantaged pupils as compared with one third nationally (see Alexander et al. 1992, p. 7).

in my research come from a mixture of rural and urban contexts and therefore may be a more representative cross section of the norm in primary education.

The focus of eight out of the nine studies identified above has been on school and pupil level variables. Apart from Mortimore et al. (1988), none have been located at the classroom level or explored the impact of the teacher variable. The starting point of my research has been the variable of teacher values and beliefs and this perhaps defines its original contribution to the body of school effectiveness research. Although establishing evidence of firm causal links between teacher values and beliefs and school effectiveness or school improvement is problematic, the findings of this study suggest that links do exist, and that certain pedagogical beliefs may be significant in explaining the different level of effectiveness among the 32 primary schools. The teacher variable is clearly a major factor in accounting for school effectiveness and school improvement.

Some of the pedagogical beliefs revealed in this research seem to relate to those ideas which found expression in the Plowden report of 1967. A stronger commitment to these beliefs appeared linked to a consistent lack of effectiveness in terms of promoting reading progress. Making schools more effective may therefore require changing certain beliefs about what constitutes effective teaching and learning. These beliefs may not be wide ranging but may be critical in the realms of goals and strategy. They may also be deeply rooted, and consequently changing values and beliefs about teaching and learning may not simply require a slight shift of emphasis. Real changes in practice may demand the resolution of ideological conflicts about the fundamental purpose of primary education and its particular contribution to a child's educational development.

Policy reforms, which are prescriptive in terms of classroom practice or which operate only at the school level, are unlikely to fully realise the aspirations of their authors without first confronting the values and beliefs which shape the cultural milieu of many primary schools. The National Literacy Strategy will possibly only thrive if it has a pervasive academic culture in which to embed itself. If it is to compete with other priorities and strategies aimed at achieving non cognitive outcomes, and is not able to integrate into what is often described by headteachers as "good primary practice", then the National Literacy Strategy may not prosper. A fundamental ideological shift may

ultimately be required in a number of primary schools if the influence of the legacy of some of the ideas of Plowden are to be minimised.

The findings of this study suggest that pedagogical culture affects classroom practice in two significant ways: by creating the necessary climate in which learning can thrive, and by influencing the selection of appropriate teaching and learning strategies. The two dimensions are interdependent and both have to be in place if pupil outcomes are to be enhanced. For example whole class interactive teaching will achieve little if the classroom climate is neither orderly nor purposeful. Equally, the establishment of an optimum learning climate does not, of itself, ensure that learning will take place. Policy makers would do well to ensure that the promotion of particular teaching strategies is not divorced from the cultural preconditions upon which their success is founded.

This study also suggests that greater precision is required in identifying and delineating particular classroom strategies. Universal nostrums such as interactive whole class teaching are unlikely to realise the aspirations of their advocates without much more detailed research into what precisely their constituent elements are, how they are effectively applied in the classroom, in what context and to what purpose. Without more clarification, they are in danger of becoming a new shibboleth that may have the same constraining influence which progressivism allegedly imposed on primary practice.

The number of differences which appeared to exist between the effectiveness outliers was greater than between the improvement outliers. This may reflect the fact that effectiveness and improvement are not necessarily shaped by the same critical factors. The findings of this study suggest that improvement may require just one or two strategic changes in terms of classroom practice to generate the momentum for improvement. By contrast, sustaining academic effectiveness year on year may require a range of strategies. Fundamentally, effectiveness is a relative concept which depends on comparisons being made with other schools. To maintain effectiveness, academically effective schools need to continue to improve rates of pupil progress in order to remain ahead of other schools who are improving levels of achievement. The ability of effective schools to continue to increase rates of progress may reside in the academic culture and the values and beliefs which characterise these schools.

The data and research instruments used in this research project combined with the nature of the schools studied may account for the above conclusions. Undoubtedly the data used in this research contained a number of limitations; it was collected at only two points in a pupil's primary career, Year 2 and Year 4, and related to only one measure of pupil outcome: progress at reading. It did not encompass baseline assessment nor performance in other subjects such as mathematics because such data was not available. Thus definitions of improvement and effectiveness are indeed narrow ones. Use of outliers posed a problem in terms of sample size and in terms of data collection from outlier schools. Weaknesses in these spheres were partially offset by the use of inspection data which threw some light on the reasons for differences in school effectiveness in promoting reading although not every outlier school was inspected during the period of the research. However, there are still important doubts over the reliability and validity of the judgements of Ofsted inspectors. The Ofsted reports, the questionnaire and interview data were all time specific whereas the quantitative data for effectiveness used pupil outcomes collected over a five year period from 1992 (when the first cohort sat their 6+ test) to 1996 (when the third cohort sat their 8+ reading test). Therefore, it is not possible to say whether pupil test scores collected during this period were the product of the same pedagogical culture as that revealed in the Summer Term 1995 when the bulk of the qualitative data was gathered. Ultimately the answer depends on the durability of pedagogical culture, and this research suggests that certain influences on values and beliefs may be long lasting.

There is growing evidence that national and local influences are affecting culture and practice in primary schools. This research covered the period 1994-6, a period when external pressures were increasing on primary schools, particularly through the system of Ofsted inspections and the publication of performance tables from 1995 onwards. The value added data used in this study is still being collected by Suffolk LEA and used by the 32 primary schools. It would be interesting to pursue the following issues:

- Whether the effectiveness outliers continue to maintain their effectiveness beyond the three years of this research?
- Whether the improvement outliers sustain their rate of improvement?

# An Examination of the Links between the Pedagogical Culture of Primary Schools, School Effectiveness and School Improvement.

## Appendices and Bibliography

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Dissertation submitted for the degree of Doctor of Philosophy

1999

The Institute of Education, University of London

# APPENDIX 1

**Preliminary draft interview question schedule piloted in February 1995**

## Question 1:

*Purpose: to identify variables which may relate to beliefs and values*

1.1. Gender M F

1.2. Age 22-30, 31-35, 36-40, 41-45, 46-50

51-55 56+

1.3. Post held in current school.

1.4. Previous school(s)

1.5. Age ranges taught in previous schools

1.6. Years a teacher in current school

1.7. Age range currently taught

1.8. Where trained?

1.9. When trained?

## Question 2

*Purpose; to identify the teacher's perceptions of the main goals of the school. The responses will be used to compare with the responses to question3. Also to establish the degree to which these responses are shared by other teachers.*

Interviewees will be asked to consider each of the following educational goals and assess how important these goals are for the school. They will be asked to rate each statement as follows:

1. Very important. One of the main priorities.
2. Quite important
3. Important
4. Not very important
5. Not important at all

Question: What are the main educational goals which you believe this **school** is trying to achieve for its pupils? Rate each goal in terms of a 5 point scale (see above).

2.1. develop respect for the rights of others and their property

2.2. develop personal responsibility for one's own actions

2.3. foster a pupils spiritual development

2.4. ensure that each pupil reaches the highest level they are capable of in the National Curriculum Attainment Targets

2.5. develop self confidence

2.6. develop an understanding and respect for other cultures

2.7. improve a pupils mathematical understanding

2.8. develop the whole child

2.9. ensure each pupil reaches his or her academic potential

2.10. develop personal responsibility for one's own actions

2.11. ensure each pupil is proficient at reading

2.12. ensure that each pupil feels cared for

2.13. ensure each pupil learns as much knowledge as they can

2.14. learn the difference between right and wrong

2.15. make learning enjoyable

2.16. prepare each pupil for the demands of the secondary phase of education

2.17. promote a students ability to learn independently

2.18. promote equal opportunities

2.19. learn to cooperate with others

2.20. ensure that each pupil experiences a rigorous curriculum

2.21. develop self discipline

2.22. ensure that each pupil experiences a curriculum appropriate to his or her ability

2.23. help pupils to come to terms with their emotions
2.24. develop high standards of behaviour

2.25. ensure that each pupil's oral skills are fully developed

2.26. make learning challenging

2.27. ensure pupils are happy

2.28. ensure that no pupil is bullied

2.29. ensure that each pupil's writing skills are fully developed

## Question 3

*Purpose: To compare the teacher's priorities with those of the school. The responses will be used for the focus of question 4. The responses will also be used to determine how far these priorities are shared by other teachers in the school*

*Question*: Rate each of the 29 statements you have just heard in terms of **your own** priorities as a classroom teacher. Use the same 5 point scale.

## Question 4

*Purpose: To explore the reasons for the differences in priorities using an open ended question*

*Question:* Select those responses where there is a 2 point difference or more. Ask the teacher to account for these differences

## Question 5

*Purpose: To explore the teacher's beliefs about the most effective strategies for promoting pupil learning*

*Question*: Ask the interviewee to rate each of the following statements on a 5 point scale according to its importance in promoting pupil's cognitive learning.

1. Very important.
2. Quite important
3. Important
4. Not very important
5. Not important at all

*Children learn best:*

5.1. by doing rather than listening

5.2. through learning by discovery

5.3. working with other children rather than working on their own

5.4. when their work is regularly marked

5.5. working in classes or groups of pupils of similar ability

5.6. when they are regularly tested

5.7. when they receive regular homework

5.8. when they are provided with work which is demanding

5.9. when learning is enjoyable

5.10. when learning is organised in mixed ability groups

## Question 6

*Purpose: To explore teacher beliefs about effective teaching. To compare these with other teachers in the school in order to establish the degree of congruence.*

*Question:* Interviewees will be asked to rate the following statements in terms of their importance. They will use the 5 point scale used in question 5

*Teaching is most effective when*

6.1. Teachers have high expectations

6.2. When pupils are given tasks which are graded in difficulty

6.3. A variety of teaching methods are used

6.4. The class receives whole class instruction

6.5. Pupils are regularly tested

6.6. When pupils all face the teacher

6.7. Pupils have a clear idea of the objectives of the lesson

6.8. When pupils are given the same task but the pupil outcomes are differentiated

6.9. Pupils are given clear responsibility for their own learning

6.10. Books are marked regularly

6.11. The subject matter is difficult

6.12. Lessons are tightly structured

6.13. Pupils are frequently taught in groups

6.14. Pupils are asked to do their own research

6.15. Tasks are set which are differentiated according to ability

6.16. Tasks are directly relevant to the child's own interests

6.17. Tasks are relevant to the child's own needs.

6.18. Teachers are aware of a pupils readiness to learn

6.19 The Headteacher frequently monitors what is happening in classrooms

## Question 7

*Purpose: To use open ended questions to explore in more detail some of the beliefs about teaching and learning and their possible origins.*

*Question*: Ask the interviewee to respond to the following questions:

7.1. Is teaching pupil's how to learn more important than what they learn?

7.2. Which theories of teaching or learning have influenced your beliefs and practice?

7.3. How do you measure your effectiveness as a teacher?

7.4. What do you feel are the biggest constraints upon your teaching?

7.5. Who or what has been the most important influence on your teaching methods?

7.6. How useful do you regard Reading Scores as measures of a pupil's cognitive development?

7.7. What single piece of advice would you give a probationary teacher about to start their first term of teaching?

7.8. How far should a headteacher influence teaching methods in a school?

7.9 How far do you feel personally responsible for a pupils progress or lack of it?

7.10 How far does your headteacher influence teaching methods in this school?

7.11. How does the headteacher influence teaching methods?

7.12 How important do you think socio-economic factors are in influencing levels of pupil achievement.

## Question 8

*Purpose: To explore some further influences on teacher beliefs about teaching and learning*

*Question:* Apart from your own beliefs about the most effective kinds of teaching, how far is your choice of teaching method influenced by any of the following:

8.1. the social objectives of the school

8.2. the need to maintain standards of good behaviour

8.3. the need to meet the Ofsted framework

8.4. the need to ensure that all children have equal access to the curriculum

# APPENDIX 2

**Second draft interview question schedule piloted 4. 4. 95.**

**The objectives of this schedule of questions:**

To discover the values and beliefs about effective teaching and learning of some of the Key Stage 2 teaching staff in a selected group of primary schools in Suffolk.

## Question 1:

*Purpose: to identify variables which may relate to beliefs and values.*

1.1. Gender M F

1.2. Age 22-30, 31-35, 36-40, 41-45, 46-50
51-55 56+

1.3. Post held in current school.

1.4. Previous school(s)

1.5. Age ranges taught in previous schools

1.6. Years a teacher in current school

1.7. Age range currently taught

1.8. Where trained?

1.9. When trained?

1.10. Subject specialism

## Question 2

*Purpose: an open ended question which is designed to identify the teacher's perceptions of the main goals of the school. The responses to question 2 will also be used to establish the degree to which these perceptions are shared by other teachers.*

What do **you** think are the really important things which this **school** is trying to achieve for its pupils?

## Question 3

*Purpose: To assess the relative importance which the informant believes the school attaches to the goals they have recalled in Question 2*

*Question:* Read back the responses to the informant and ask them to rank them in order of importance. Use the 5 point scale.

1. Very important.
2. Important
3. Neither important nor unimportant (neutral)
4. Not very important
5. Not important at all

## Question 4

*Purpose: an open ended question which is designed to identify the teachers goals in the classroom. The responses to this question will also be used to establish the degree to which these goals are shared by other teachers.*

*Question:* What are the really important things which **you** are trying to achieve in your classroom for your pupils?

## Question 5

*Purpose: To assess the relative importance which the informant believes the school attaches to the goals they have recalled in Question 4*

Read back the responses to the informant and ask them to rank them in order of importance. Use the 5 point scale.

1. Very important.
2. Important
3. Neither important nor unimportant (neutral)
4. Not very important
5. Not important at all

## Question 6

*Purpose: to validate the responses to questions 2 and 3. To remind the informant of other goals which may be important but which did not immediately spring to mind when responding to Question 2*

*Question*: Consider each of the following educational goals and assess how important these goals are for the school. They will be asked to rate each statement as follows:

1. Very important.
2. Important
3. Neither important nor unimportant (neutral)
4. Not very important
5. Not important at all

*Statements*

6.1 fostering a pupil's spiritual development

6.2 ensuring that each pupil reaches the highest level they are capable of in the National Curriculum Attainment Targets

6.3 ensuring a pupil acquires as much mathematical understanding as possible

6.4 ensuring that each pupil uses their spare time constructively

6.5 ensuring that each pupil acquires as much knowledge as they can

6.6 making learning enjoyable

6.7 preparing each pupil for the demands of the secondary phase of education

6.8. ensuring each pupil becomes an independent learner

6.9 ensuring that each pupil develops their reading skills to the full

6.10 ensuring pupils have a balanced diet

6.11 making learning challenging

6.12. ensuring pupils are happy

6.13. ensuring that each pupil's writing skills are fully developed

## Question 7

*Purpose: To compare the teacher's priorities with those perceived to be the school's. The responses will be also be used for the focus of Question 8. The responses will also be used to determine how far these priorities are shared by other teachers in the school.*

*Question*: Rate each of the 13 statements you have just heard in terms of **your own** priorities as a classroom teacher.

1. Very important.
2. Important
3. Neither important nor unimportant (neutral)
4. Not very important
5. Not important at all

## Question 8

*Purpose: To explore the reasons for the differences in priorities using an open ended question.*

*Question:* Select those responses to the statements in questions 6 and 7 where there is a two point difference or more. Ask the teacher to account for these differences.

## Question 9

*Purpose: To explore the teacher's beliefs about the most effective strategies for promoting pupil learning.*

*Question*: Ask the interviewee to rate the following statements on a five point scale according to its effectiveness in promoting pupils' cognitive learning.

1. Agree strongly
2. Agree
3. Neither agree nor disagree (neutral)
4. Disagree
5. Strongly disagree

*Children learn best:*

9.1. by doing rather than listening

9.2. through learning by discovery

9.3. working with other children rather than working on their own

9.4. when their work is regularly marked

9.5. working in classes or groups of pupils of similar ability

9.6. when they are regularly tested

9.7. when they receive regular homework

9.8. when they are provided with work which is demanding

9.9. when learning is enjoyable

9.10. when learning is organised in mixed ability groups

## Question 10

*Purpose: To explore teacher beliefs about effective teaching. To compare these with other teachers in the school in order to establish the degree of congruence.*

*Question:* Interviewees will be asked to rate the following statements in terms of their importance. They will use the 5 point scale used in question 9.

*Teaching is most effective when*

10.1. Teachers have high expectations

10.2. When pupils are given tasks which are graded in difficulty

10.3. A variety of teaching methods are used

10.4. The class receives whole class instruction

10.5. Pupils are regularly tested

10.6. When pupils all face the teacher

10.7. Pupils have a clear idea of the objectives of the lesson

10.8. When pupils are given the same task but the pupil outcomes are differentiated

10.9. Pupils are given clear responsibility for their own learning

10.10. Books are marked regularly

10.11. The subject matter is complex and challenging

10.12. Lessons are tightly structured

10.13. Pupils are frequently taught in groups

10.14. Pupils are asked to do their own research

10.15. Tasks are set which are differentiated according to ability

10.16. Tasks are directly relevant to the child's own interests

10.17. Tasks are relevant to the child's own needs

10.18. Teachers are aware of a pupil's readiness to learn.

10.19 The Headteacher frequently monitors what is happening in classrooms

10.20 Lesson objectives are planned in advance

## Question 11

*Purpose: To use open ended questions to explore in more detail some of the beliefs about teaching and learning and their possible origins.*

*Question*: Ask the Interviewee to respond to the following questions:

11.1. Is teaching pupils how to learn more important than what they learn? If so, why? If not, why not?

11.2. Which theories,if any, of teaching or learning have influenced your beliefs and practice?

11.3. How do you guage whether or not you are a good teacher?

11.4. What do you feel are the biggest constraints upon your teaching?

11.5. Who or what has been the most important influence on your teaching methods?

11.6. How useful do you regard Reading Scores as measures of a pupil's cognitive development?

11.7. What single piece of advice would you give a probationary teacher about to start their first term of teaching?

11.8. How far should a headteacher influence teaching methods in a school?

11.9. How far do you feel personally responsible for a pupil's progress or lack of it?

11.10. How far does your headteacher influence teaching methods in this school?

11.11. How important do you think socio-economic factors are in influencing levels of pupil achievement in your school?

## Question 12

*Purpose: To explore some further influences on teacher beliefs about teaching and learning.*

*Question:* Apart from your own beliefs about the most effective kinds of teaching, how far is your choice of teaching method influenced by any of the following:

12.1. the social objectives of the school

12.2. the need to maintain standards of good behaviour

12.3. the need to meet the Ofsted framework

12.4. the need to ensure that all children have equal access to the curriculum

# APPENDIX 3

Tel No 0473 264607 (work)
0473 310847 (home)

128, The Street,
Capel St Mary,
Ipswich IP9 2EH

Friday 21st April 1995

Dear ,

Thank you very much indeed for kindly agreeing to help me with my research project. The purpose of this letter is to outline in more detail the focus of my research and to explain more fully how I would like you to help me.

As you may know I have been part of Suffolk LEA's Value Added Project since September 1994. This project has involved 42 primary schools and has sought to develop ways in which value added data can be used to help schools evaluate their current practice and develop improvement strategies. I have become particularly interested in the teaching and learning strategies used at Key Stage 2 in the primary school and my research will attempt to explore the experiences of a small number of primary schools over the next three years. To do this I need to enlist the help of headteachers and some of their Key Stage 2 teachers who would be prepared to be interviewed for half an hour and who would also allow me to observe them teaching.

The research I am conducting is to be assessed by the Institute of Education at the University of London as a Ph.D. submission. Should a decision be taken at a later date to publish all or part of the thesis, permission will be sought from all participants. Can I reassure you and from the outset that any information you supply will be treated in strictest confidence and when the research is written up your responses will be anonymised.

You may be wondering why I have chosen your school. The answer is twofold: your school volunteered to join the Value Added Project and therefore is a school which is clearly interested in school improvement and so is likely to be more receptive to a research project such as mine; secondly your school is based in Ipswich which is close to where I live!

Having read this letter you may now be having second thoughts! If this is the case then please let me know. You are under no obligation whatsoever and I am only too aware of the pressures teachers are under at the moment. This may be the last thing you want to be involved in. However I do hope that the practical relevance of my research appeals to you and that ultimately it may be of help to you and your school.

Thank you once again. I look forward to our meeting on 28th April when I will be able to clarify any further concerns you may have about this research.

Yours Sincerely

David Floyd

Suffolk County Council

Education

Your Reference:
Our Reference: DF/CJJ/research5
Please ask for: Mr D Floyd
Direct Line/Ext: (01473)264607
Date: 19 May 1995

Dear

I would be most grateful if you could spare the time to help me with my research project.

As you may know I have been part of the Suffolk LEA's Value Added Project since September 1994. This project has involved 41 primary schools and has sought to develop ways in which value added data can be used to help schools evaluate their current practice and develop improvement strategies. I have become particularly interested in the teaching and learning strategies used at Key Stage 2 in the primary school and my research is attempting to explore the experiences of a number of primary schools in the Project over the next three years. To do this I need to enlist the help of headteachers and some of their Key Stage 2 teachers who would be prepared to complete the attached questionnaire.

The research I am conducting is to be assessed by the Institute of Education at the University of London as a Ph D submission. Should a decision be taken at a later date to publish all or part of the thesis, permission will be sought from all participants. Can I reassure you and from the outset that any information you supply will be treated in the strictest confidence and when the research is written up your responses will be anonymised.

Having read this letter you may now be having second thoughts! If this is the case then please let me know. You are under no obligation whatsoever and I am only too aware of the pressures teachers are under at the moment. This may be the last thing you want to be involved in. However, I do hope that the practical relevance of my research appeals to you and that ultimately it may be of help to schools in Suffolk. If you do find time to complete this, I would be grateful if it could be returned in the stamped addressed envelope to me by . If you do not wish to take part then please return the questionnaire to me in the attached envelope.

Many thanks.

Yours sincerely

DAVID FLOYD
Field Officer (School Improvement Project)
Inspection and Advice Division



David Peacham, County Education Officer •
• St Andrew House, [illegible], Ipswich • IP4 1LJ • Tel 01473 230000 • Fax 01473 230395 •

# APPENDIX 5

## INTERVIEW SCHEDULE: [Revised Draft (23. 4. 95)]

**The objectives of this schedule of questions:**

To discover the values and beliefs about effective teaching and learning of some of the Key Stage 2 teaching staff in a selected group of primary schools in Suffolk.

**Question 1:**

*Purpose: to identify variables which may relate to beliefs and values.*

1.1. Gender M F

1.2. Age 22-30, 31-35, 36-40, 41-45, 46-50
51-55 56+

1.3. Post held in current school.

1.4. Previous school(s)

1.5. Age ranges taught in previous schools

1.6. Years a teacher in current school

1.7. Age range currently taught

1.8. Where trained?

1.9. When trained?

1.10. Subject specialism

**Question 2**

*Purpose; an open ended question which is designed to identify the teacher's perceptions of the main goals of the school. The responses to question 2 will also be used to establish the degree to which these perceptions are shared by other teachers.*

*Question:* What do **you** think are the really important things which this **school** is trying to achieve for its pupils? ( **TAPERECORDER)**

**Question 3**

*Purpose: To assess the relative importance which the informant believes the school attaches to the goals they have recalled in Question 2.*

*Question:* Read back the responses to the informant and ask them to rank them in order of importance. Show them the sheet with the 5 point scale.

**Question 4**

*Purpose: an open ended question which is designed to identify the teachers goals in the classroom. The responses to this question will also be used to establish the degree to which these goals are shared by other teachers.*

*Question:* What are the really important things which **you** are trying to achieve in your classroom for your pupils? **( TAPERECORDER)**

**Question 5**

*Purpose: To assess the relative importance which the informant believes the school attaches to the goals they have recalled in Question 4.*

*Question:* Read back the responses to the informant and ask them to rank them in order of importance. Show the 5 point scale.

**Question 6**

*Purpose: to validate the responses to Questions 2 and 3. To remind the informant of other goals which may be important but which did not immediately spring to mind when responding to Question 2.*

*Question*: Consider each of the following educational goals and assess how important these goals are for **the school.**

They will be asked to rate each statement according to the 5 point scale. Show the 5 point scale

*Statements*

6.1 fostering a pupil's spiritual development

6.2 ensuring that each pupil reaches the highest level they are capable of in the National Curriculum Attainment Targets

6.3 ensuring a pupil acquires as much mathematical understanding as possible

6.4 ensuring that each pupil uses their spare time constructively

6.5 ensuring that each pupil acquires as much knowledge as they can

6.6 making learning enjoyable

6.7 preparing each pupil for the demands of the secondary phase of education

6.8. ensuring each pupil becomes an independent learner

6.9 ensuring that each pupil develops their reading skills to the full

6.10 ensuring pupils have a balanced diet

6.11 making learning challenging

6.12. ensuring pupils are happy

6.13. ensuring that each pupil's writing skills are fully developed

**Question 7**

*Purpose: To compare the teacher's priorities with those perceived to be the school's. The responses will be also be used for the focus of Question 8. The responses will also be used to determine how far these priorities are shared by other teachers in the school.*

*Question*: Rate each of the 13 statements you have just heard in terms of **your own** priorities as a classroom teacher.

Show the same 5 point scale as per Question 6.

**Question 8**

*Purpose: To explore the reasons for the differences in priorities using an open ended question.*

*Question:* Select those responses to the statements in Questions 6 and 7 where there is a 2 point difference or more. Ask the teacher to account for these differences. **(TAPERECORDER)**

**Question 9**

*Purpose: To explore the teacher's beliefs about the most effective strategies for promoting pupil learning.*

*Question*: Ask the interviewee to assess each of the following statements according to its' effectiveness in promoting pupil's cognitive learning.

Show the Agree/Disagree scale

*Children learn best:*

9.1. By doing rather than listening

9.2. Through learning by discovery

9.3. Working with other children rather than working on their own

9.4. When their work is regularly marked

9.5. Working in classes or groups of pupils of similar ability

9.6. When they are regularly tested

9.7. When they receive regular homework

9.8. When they are provided with work which is demanding

9.9. When learning is enjoyable

9.10. When learning is organised in mixed ability groups

9.11 When taught didactically as part of a whole class lesson

9.12 When taught specific subjects rather than an integrated curriculum

9.13 When mnemonics are used

9.14 When they are given the freedom to choose which topics to study.

**Question 10**

*Purpose: To explore teacher beliefs about effective teaching. To compare these with other teachers in the school in order to establish the degree of congruence.*

*Question:* Intformants will be asked to assess each of the following statements according how effective they consider each teaching method is in terms of promoting pupil's cognitive development.

Show the 5 point scale used in question 9

*Teaching is most effective when*

10.1. Teachers have high expectations

10.2. When pupils are given tasks which are graded in difficulty

10.3. A variety of teaching methods are used

10.4. The class receives whole class instruction

10.5. Pupils are regularly tested

10.6. When pupils all face the teacher

10.7. Pupils have a clear idea of the objectives of the lesson

10.8. When pupils are given the same task but the pupil outcomes are differentiated

10.9. Pupils are given clear responsibility for their own learning

10.10. Books are marked regularly

10.11. The subject matter is complex and challenging

10.12. Lessons are tightly structured

10.13. Pupils are frequently taught in groups

10.14. Pupils are asked to do their own research

10.15. Tasks are set which are differentiated according to ability

10.16. Tasks are directly relevant to the child's own interests

10.17. An integrated topic based approach is used

10.18. When pupils are given the freedom to choose what to study.

10.19 The Headteacher frequently monitors what is happening in classrooms

10.20 Lesson objectives are planned in advance

**Question 11**

*Purpose: To use open ended questions to explore in more detail some of the beliefs about teaching and learning and their possible origins.*

*Question*: Ask the Interviewee to respond to the following questions:

**USE the TAPERECORDER**

11.1. Is teaching pupils how to learn more important than what they learn? If so, why? If not, why not?

11.2. Which theories, if any, of teaching or learning have influenced your beliefs and practice?

11.3. How do you guage whether or not you are a good teacher?

11.4. What do you feel are the biggest constraints upon your teaching?

11.5. Who or what has been the most important influence on your teaching methods?

11.6. How useful do you regard Reading Scores as measures of a pupil's cognitive development?

11.7. What single piece of advice would you give a probationary teacher about to start their first term of teaching?

11.8. How far should a headteacher influence teaching methods in a school?

11.9 How far do you feel personally responsible for a pupil's progress or lack of it?

11.10 How far does your headteacher influence teaching methods in this school?

11.11. How important do you think socio-economic factors are in influencing levels of pupil achievement in your school?

11.12. How important is it that children learn specific subjects at Key Stage 2?

**Question 12**

*Purpose: To explore some further influences on teacher beliefs about teaching and learning.*

*Question:* Apart from your own beliefs about the most effective kinds of teaching, how far is your choice of teaching method influenced by any of the following:

**(TAPERECORDER)**

12.1. The social objectives of the school

12.2. The need to maintain standards of good behaviour

12.3. The need to meet the Ofsted framework

12.4. The need to ensure that all children have equal access to the curriculum

**Question 13: Direct Instruction**

American educators have identified a model of good teaching that they are trying to encourage US teachers to adopt. It is known as Direct Instruction. This approach involves teachers in the following:

(a) carefully structuring the learning experience;

(b) proceeding in small steps but at a rapid pace;

(c) giving detailed and more instructions and explanations than is usually necessary;

(d) having a high frequency of questions and overt, active practice;

(e) providing feedback and corrections, particularly in the initial stages of learning new material;

(f) having a success rate of 80per cent or higher in initial learning;

(g) dividing assignments which are done at a desk into smaller segments or devising ways to provide frequent monitoring;

(h) providing for continued student practice (over-learning) so that they have a success rate of 90-100 percent and become rapid, confident and firm.

*<u>Question:</u> Having studied the eight elements described above please answer the following questions:*

13.1. Which of the 8 elements do you think are most likely to promote effective learning?

13.2. Which of the 8 elements are least likely to promote effective learning?

13.3. How acceptable would this model of teaching be to you? Please explain your answer.

13.4. How acceptable would this model of teaching be to other teachers in this school? Please explain your answer.

**Response scales used in this schedule**

For questions 3, 5, 6 and 7:

1. Very important.
2. Fairly important
3. Neither important nor unimportant (neutral)
4. Not important
5. Not important at all

For questions 9 and 10:

1. Strongly agree
2. Agree
3. Uncertain; neither agree nor disagree
4. Disagree
5. Strongly disagree

EACHING AND LEARNING QUESTIONNAIRE

# APPENDIX 6

Office Use Only

CHOOL.....

**Question 1: Set out below are a list of educational goals which often appear in a school's prospectus. Consider each of these educational goals and assess how important <u>your school</u> regards these goals.**

**Please rate each statement according to the following scale.**

| | | Very Important | Fairly Important | Slightly Important | Not at all Important |
|---|---|---|---|---|---|
| | | *Please Circle* | | | |
| 1.1 | Fostering a pupil's spiritual development | 1 | 2 | 3 | 4 |
| 1.2 | Ensuring that each pupil reaches the highest level they are capable of in the National Curriculum Attainment Targets | 1 | 2 | 3 | 4 |
| 1.3 | Ensuring that each pupil acquires as much mathematical understanding as possible | 1 | 2 | 3 | 4 |
| 1.4 | Ensuring that each pupil uses their spare time out of school constructively | 1 | 2 | 3 | 4 |
| 1.5 | Ensuring that each pupil acquires as much knowledge as they can | 1 | 2 | 3 | 4 |
| 1.6 | Making learning enjoyable | 1 | 2 | 3 | 4 |
| 1.7 | Preparing each pupil for the demands of the secondary phase of education | 1 | 2 | 3 | 4 |
| 1.8 | Ensuring each pupil becomes an independent learner | 1 | 2 | 3 | 4 |
| 1.9 | Ensuring that each pupil develops their reading skills to the full | 1 | 2 | 3 | 4 |
| 1.10 | Ensuring pupils have a healthy and balanced diet | 1 | 2 | 3 | 4 |
| 1.11 | Making learning challenging | 1 | 2 | 3 | 4 |
| 1.12 | Ensuring pupils are happy | 1 | 2 | 3 | 4 |
| 1.13 | Ensuring that each pupil's writing skills are fully developed | 1 | 2 | 3 | 4 |

**Question 2: Consider each of the following educational goals and assess how important they are in terms of your own priorities as a classroom teacher.**

**Please rate each statement according to the following scale.**

| | | Very Important | Fairly Important | Slightly Important | Not at all Important |
|---|---|---|---|---|---|
| | | *Please Circle* | | | |
| 2.1 | Fostering a pupil's spiritual development | 1 | 2 | 3 | 4 |
| 2.2 | Ensuring that each pupil reaches the highest level they are capable of in the National Curriculum Attainment Targets | 1 | 2 | 3 | 4 |
| 2.3 | Ensuring that each pupil acquires as much mathematical understanding as possible | 1 | 2 | 3 | 4 |
| 2.4 | Ensuring that each pupil uses their spare time out of school constructively | 1 | 2 | 3 | 4 |
| 2.5 | Ensuring that each pupil acquires as much knowledge as they can | 1 | 2 | 3 | 4 |
| 2.6 | Making learning enjoyable | 1 | 2 | 3 | 4 |
| 2.7 | Preparing each pupil for the demands of the secondary phase of education | 1 | 2 | 3 | 4 |
| 2.8 | Ensuring each pupil becomes an independent learner | 1 | 2 | 3 | 4 |
| 2.9 | Ensuring that each pupil develops their reading skills to the full | 1 | 2 | 3 | 4 |
| 2.10 | Ensuring pupils have a healthy and balanced diet | 1 | 2 | 3 | 4 |
| 2.11 | Making learning challenging | 1 | 2 | 3 | 4 |
| 2.12 | Ensuring pupils are happy | 1 | 2 | 3 | 4 |
| 2.13 | Ensuring that each pupil's writing skills are fully developed | 1 | 2 | 3 | 4 |

**Question 3:** Set out below are a number of statements about how children learn. Consider each statement and assess how far you agree that the *learning strategy* described in the statement promotes a pupil's cognitive development.

**Please rate your level of agreement according to the following scale.**

| | | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| | | | | *Please Circle* | | |
| **Children learn best:** | | | | | | |
| 3.1 | By doing rather than listening | 1 | 2 | 3 | 4 | 5 |
| 3.2 | Through learning by discovery | 1 | 2 | 3 | 4 | 5 |
| 3.3 | Working with other children rather than working on their own | 1 | 2 | 3 | 4 | 5 |
| 3.4 | When their work is regularly marked | 1 | 2 | 3 | 4 | 5 |
| 3.5 | Working in classes or groups of pupils of similar ability | 1 | 2 | 3 | 4 | 5 |
| 3.6 | When they are regularly tested | 1 | 2 | 3 | 4 | 5 |
| 3.7 | When they receive regular homework | 1 | 2 | 3 | 4 | 5 |
| 3.8 | When they are provided with work which is demanding | 1 | 2 | 3 | 4 | 5 |
| 3.9 | When learning is enjoyable | 1 | 2 | 3 | 4 | 5 |
| 3.10 | When learning is organised in mixed ability groups | 1 | 2 | 3 | 4 | 5 |
| 3.11 | When taught didactically as part of a whole class lesson | 1 | 2 | 3 | 4 | 5 |
| 3.12 | When taught specific subjects rather than an integrated curriculum | 1 | 2 | 3 | 4 | 5 |
| 3.13 | When mnemonics are used | 1 | 2 | 3 | 4 | 5 |
| 3.14 | When they are given the freedom to choose which topics to study | 1 | 2 | 3 | 4 | 5 |

**Question 4:** Set out below are a series of statements about teaching. Consider each statement and assess how far you agree that the *teaching method* described in the statement promotes a pupil's cognitive development.

**Please rate your level of agreement according to the following scale.**

| | | Strongly Agree | Agree | Uncertain | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| | | | | *Please Circle* | | |
| **Teaching is most effective when:** | | | | | | |
| 4.1 | Teachers have high expectations | 1 | 2 | 3 | 4 | 5 |
| 4.2 | Pupils are given tasks which are graded in difficulty | 1 | 2 | 3 | 4 | 5 |
| 4.3 | A variety of teaching methods are used | 1 | 2 | 3 | 4 | 5 |
| 4.4 | The class receives whole class instruction | 1 | 2 | 3 | 4 | 5 |
| 4.5 | Pupils are regularly tested | 1 | 2 | 3 | 4 | 5 |
| 4.6 | Pupils all face the teacher | 1 | 2 | 3 | 4 | 5 |
| 4.7 | Pupils have a clear idea of the objectives of the lesson | 1 | 2 | 3 | 4 | 5 |
| 4.8 | Pupils are given the same task but the pupil outcomes are differentiated | 1 | 2 | 3 | 4 | 5 |
| 4.9 | Pupils are given clear responsibility for their own learning | 1 | 2 | 3 | 4 | 5 |
| 4.10 | Books are marked regularly | 1 | 2 | 3 | 4 | 5 |
| 4.11 | The subject matter is complex and challenging | 1 | 2 | 3 | 4 | 5 |
| 4.12 | Lessons are tightly structured | 1 | 2 | 3 | 4 | 5 |
| 4.13 | Pupils work frequently in groups | 1 | 2 | 3 | 4 | 5 |
| 4.14 | Pupils are asked to do their own research | 1 | 2 | 3 | 4 | 5 |
| 4.15 | Tasks are set which are differentiated accordingly to ability | 1 | 2 | 3 | 4 | 5 |
| 4.16 | Tasks are directly relevant to the child's own interests | 1 | 2 | 3 | 4 | 5 |
| 4.17 | An integrated topic based approach is used | 1 | 2 | 3 | 4 | 5 |
| 4.18 | When pupils are given the freedom to choose what to study | 1 | 2 | 3 | 4 | 5 |
| 4.19 | The Headteacher frequently monitors what is happening in classrooms | 1 | 2 | 3 | 4 | 5 |
| 4.20 | Lesson objectives are planned in advance | 1 | 2 | 3 | 4 | 5 |

**Question 5**

5.1 Whose ideas, if any, on teaching or learning have influenced your beliefs and practice? Please tick the appropriate box(es)

1. Piaget ☐
2. Skinner ☐
3. Plowden ☐
4. A S Neill ☐
5. No-one I can readily recall ☐
6. Others (please list) ..... ☐

.....

5.2 Who or what has been <u>the most</u> important influence on your teaching methods? Please tick the appropriate box.

1. The theoretical training I received when I was a student teacher ☐
2. My teaching practices when I was student ☐
3. Other colleagues with whom I have worked ☐
4. INSET courses I have attended ☐
5. A Headteacher I have worked with ☐
6. My current Headteacher ☐
7. Books or articles I have read ☐
8. The OFSTED criteria on the quality of teaching and learning ☐
9. Adviser(s) ☐
10. The way I was taught at school ☐
11. Others (please explain) ..... ☐

.....

5.3 How do you gauge whether or not you are a good teacher? Please circle : 1 for Yes and 2 for No

1. By the quality of work produced by the children (both written or oral) 1 2
2. By the reactions of parents 1 2
3. By SAT results 1 2
4. By reading test results 1 2
5. By comments from the Headteacher 1 2
6. By comments from other teachers 1 2
7. By how happy the children are 1 2
8. I'm not sure 1 2
9. Other (please explain) .....

5.4 What do you feel are the constraints upon your teaching?
(i) Please tick the appropriate box(es)

1. The size of my class ☐
2. The background of the children ☐
3. Lack of parental interest ☐
4. SAT tests ☐
5. The National Curriculum ☐
6. The size of my classroom ☐
7. The lack of books and resources ☐
8. The attitude of the children ☐
9. The behaviour of the children ☐
10. My own lack of subject knowledge ☐
11. Lack of time to prepare lessons ☐
12. Other (please explain) ..... ☐

.....

(ii) In your view, which are the 2 biggest constraints? Please insert the numbers in these boxes ☐ ☐

5.5 Which one of the following pieces of advice would you give a probationary teacher about to start their first term of teaching? Please tick one box

1. Establish your authority from the outset ☐
2. Establish a happy and secure atmosphere in your class ☐
3. Pace yourself ☐
4. Don't be afraid to experiment ☐
5. Learn each child's name as soon as possible ☐
6. Other (please explain) ..... ☐

.....

**Question 6**

6.1 To what extent should a Headteacher influence teaching methods in a school?

| | Please Circle |
|---|---|
| A great extent | 1 |
| A fair extent | 2 |
| Slightly | 3 |
| Not at all | 4 |

6.2 How far does your Headteacher influence teaching methods in this school?

Please Circle

| | |
|---|---|
| A great extent | 1 |
| A fair extent | 2 |
| Slightly | 3 |
| Not at all | 4 |

6.3 How far do you feel personally responsible for a pupil's progress or lack of it?

| | |
|---|---|
| Very Responsible | 1 |
| Fairly Responsible | 2 |
| Slightly Responsible | 3 |
| Not Responsible | 4 |

6.4 How useful do you regard Reading Scores as measures of a pupil's cognitive development?

| | |
|---|---|
| Very Useful | 1 |
| Fairly Useful | 2 |
| Slightly Useful | 3 |
| Of No Use At All | 4 |

6.5 How important do you think socio-economic factors are in influencing levels of pupil achievement in your school?

| | |
|---|---|
| Very Important | 1 |
| Fairly Important | 2 |
| Slightly Important | 3 |
| Not At All Important | 4 |

6.6 How important is it that children learn specific subjects other than English and Maths at Key Stage 2?

| | |
|---|---|
| Very Important | 1 |
| Fairly Important | 2 |
| Slightly Important | 3 |
| Not At All Important | 4 |

6.7 Teaching pupils how to learn is more important than what they learn.

| | |
|---|---|
| Strongly Agree | 1 |
| Agree | 2 |
| Uncertain | 3 |
| Disagree | 4 |
| Disagree Strongly | 5 |

Question 7

American educators have identified a model of good teaching which they are trying to encourage US teachers to adopt. It is know as Direct Instruction. This approach involves teachers in implementing the following eight strategies in their teaching:

(1) carefully structuring the learning experience;

(2) proceeding in small steps but at a rapid pace;

(3) giving detailed and more instructions and explanations than is usually necessary;

(4) having a high frequency of questions and overt, active practice;

(5) providing feedback and corrections, particularly in the initial stages of learning new material;

(6) having a success rate of 80% or higher in initial learning;

(7) dividing assignments which are done at a desk into smaller segments and devising ways to provide frequent monitoring;

(8) providing for continued student practice (over-learning) so that they have a success rate of 90-100 percent and become rapid, confident and firm.

Question having studied the eight elements described above please answer the following questions:

7.1 Which of the eight strategies, if any, do you think are most likely to promote effective learning? *Please put the number of the strategy in the boxes*

☐ ☐ ☐
☐ ☐ ☐
☐ ☐

7.2 Which of the eight strategies, if any, are least likely to promote effective learning. *Please put the number of the strategy in the boxes*

☐ ☐ ☐
☐ ☐ ☐
☐ ☐

7.3 (I) How acceptable would this model of teaching be to you? *Please circle the statement which most closely reflects your view.*

| | |
|---|---|
| Very Acceptable | 1 |
| Fairly Acceptable | 2 |
| Uncertain | 3 |
| Completely Uncertain | 4 |

(II) Briefly explain why you hold this view

.....

7.4 How acceptable would this model of teaching be to other teachers in this school? *Please circle the statement which most closely reflects your perception of this view.*

| | |
|---|---|
| Very Acceptable | 1 |
| Fairly Acceptable | 2 |
| Uncertain | 3 |
| Completely Unacceptable | 4 |

Question 8

8.1 What strategies do you use to identify children with limited reading skills?

.....

.....

.....

8.2 What strategies do you use to help children with limited reading skills?

.....

.....

.....

8.3 On average how much time do you spend every week specifically on developing reading skills with your class?

.....

.....

.....

## Question 9

Thank you very much indeed for answering the above questions. Finally I need to ask you some personal data questions in order to help me classify your answers and to make statistical comparisons.

| | | | |
|---|---|---|---|
| 9.1 | Gender (Please Circle) | Male | 1 |
| | | Female | 2 |
| 9.2 | Age (Please Circle) | 22-30 | 1 |
| | | 31-35 | 2 |
| | | 36-40 | 3 |
| | | 41-45 | 4 |
| | | 46-50 | 5 |
| | | 51+ | 6 |

9.3 Post held in Current School.....

9.4 Previous School(s) and Type.....

.....

| | | | |
|---|---|---|---|
| 9.5 | Years as Teacher in Current School (Please Circle) | 1 Year or less | 1 |
| | | 2-4 Years | 2 |
| | | 5-7 Years | 3 |
| | | 8-10 Years | 4 |
| | | 11 or more | 5 |

9.6 Age range currently taught.....

| | | | |
|---|---|---|---|
| 9.7 | Where trained? (Please Circle) | College of Education | 1 |
| | | University Institute of Education (PGCE) | 2 |
| | | Other (please explain) | 3 |

.....

.....

9.8 When did you complete your teacher training? (Please circle relevant number)

| | |
|---|---|
| 0-5 years ago | 1 |
| 6-10 years ago | 2 |
| 11-15 years ago | 3 |
| 16-20 years ago | 4 |
| 21 or more years ago | 5 |

9.9 Main Subject Specialism (please circle)

| | |
|---|---|
| Maths | 1 |
| Science | 2 |
| Art | 3 |
| History | 4 |
| Geography | 5 |
| English | 6 |
| Modern Foreign Language | 7 |
| PE | 8 |
| Music | 9 |
| Design Technology | 10 |
| Other..... | 11 |

9.10 Age range for which you were trained (please circle relevant number)

| | |
|---|---|
| Infant (5-7) | 1 |
| Infant and Junior (5-11) | 2 |
| Junior (7-11) | 3 |
| Middle | 4 |
| Secondary | 5 |
| Other | 6 |

9.11 Please add other comments you wish about any of the issues covered in this questionnaire.

.....

.....

.....

.....

.....

.....

.....

.....

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.....

.....

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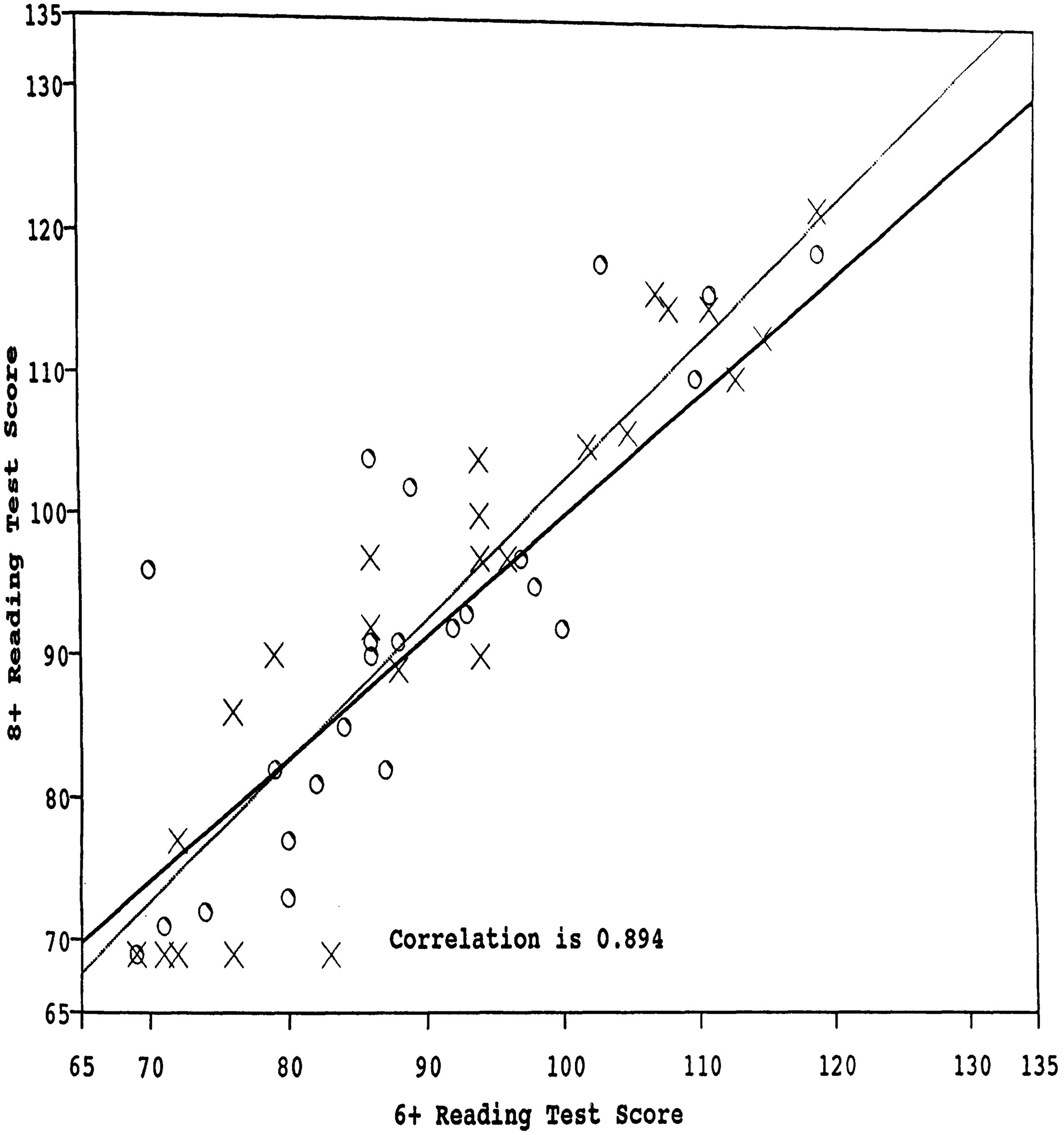
.....

.....

Thank you very much for your help in completing this questionnaire. Please return by Friday 23 June 1995 to David Floyd, Inspection and Advice Division, St Andrew House, County Hall, Ipswich, IP4 1LJ using the stamp addressed envelope provided.

# 8+ against 6+ Reading Scores

Graph produced on 19 Sep 94



8+ against 6+ Reading Scores

Residuals

**REMEMBER these figures are only indicators and like all statistics they have their limitations and only represent on** view of reality.

**Summary of method and terms used:**

Each pupil is plotted on the chart at the intersection of their 6+ score from the horizontal axis (x coordinate) and their 8+ score from the vertical axis (y coordinate).

The "expected" individual performance is calculated statistically using the *actual* 6+ and 8+ scores of all the pupi in the school sample and it is represented for every pupil by the "best fit" line for the school (dotted line on the chart).

The school "residual" is a measure of how far the individual pupil's *actual* 8+ reading score is *different* from that "expected", given his or her 6+ score and the performance of all the pupils in the school sample. The residual is the difference measured vertically from the pupil plot to the best fit line.

The county "residual" for the pupil is the difference between his or her 8+ score and that "expected" given the actual scores of all the pupils in the county sample as shown by the solid line on the chart.

Details of how to interpret this chart and table are given in the accompanying papers.

| Name | DOB | Sex | 6+ Score X Co-ord | 8+ Score Y Co-ord | Residual (School) | Residual (County) |
|---|---|---|---|---|---|---|
| | | F | 69.00 | 69.00 | -2.68 | -4.24 |
| | | M | 69.00 | 69.00 | -2.68 | -4.24 |
| | | F | 70.00 | 96.00 | 23.33 | 21.90 |
| | | M | 71.00 | 69.00 | -4.66 | -5.96 |
| | | F | 71.00 | 71.00 | -2.66 | -3.96 |
| | | M | 72.00 | 69.00 | -5.65 | -6.82 |
| | | M | 72.00 | 77.00 | 2.35 | 1.18 |
| | | F | 74.00 | 72.00 | -4.63 | -5.54 |
| | | M | 76.00 | 69.00 | -9.62 | -10.26 |
| | | M | 76.00 | 86.00 | 7.38 | 6.74 |
| | | F | 79.00 | 82.00 | 0.41 | 0.16 |
| | | M | 79.00 | 90.00 | 8.41 | 8.16 |
| | | F | 80.00 | 77.00 | -5.58 | -5.70 |
| | | F | 80.00 | 73.00 | -9.58 | -9.70 |
| | | F | 82.00 | 81.00 | -3.57 | -3.42 |
| | | M | 83.00 | 69.00 | -16.56 | -16.28 |
| | | F | 84.00 | 85.00 | -1.55 | -1.14 |
| | | F | 86.00 | 104.00 | 15.47 | 16.14 |
| | | M | 86.00 | 97.00 | 8.47 | 9.14 |
| | | F | 86.00 | 90.00 | 1.47 | 2.14 |
| | | M | 86.00 | 92.00 | 3.47 | 4.14 |
| | | F | 86.00 | 91.00 | 2.47 | 3.14 |
| | | F | 87.00 | 82.00 | -7.53 | -6.72 |
| | | F | 88.00 | 91.00 | 0.48 | 1.42 |
| | | M | 88.00 | 89.00 | -1.52 | -0.58 |
| | | F | 89.00 | 102.00 | 10.49 | 11.56 |
| | | F | 92.00 | 92.00 | -2.48 | -1.02 |
| | | F | 93.00 | 93.00 | -2.48 | -0.88 |
| | | M | 94.00 | 100.00 | 3.53 | 5.26 |
| | | M | 94.00 | 90.00 | -6.47 | -4.74 |
| | | M | 94.00 | 104.00 | 7.53 | 9.26 |
| | | M | 94.00 | 97.00 | 0.53 | 2.26 |
| | | M | 96.00 | 97.00 | -1.45 | 0.54 |
| | | F | 97.00 | 97.00 | -2.44 | -0.32 |

8+ against 6+ Reading Scores

| | | | | | |
|---|---|---|---|---|---|
| 08/05/1985 | F | 98.00 | 95.00 | -5.43 | -3.18 |
| 10/05/1985 | F | 100.00 | 92.00 | -10.42 | -7.90 |
| 21/01/1985 | M | 102.00 | 105.00 | 0.60 | 3.38 |
| 17/09/1984 | F | 103.00 | 118.00 | 12.61 | 15.52 |
| 01/07/1985 | M | 105.00 | 106.00 | -1.37 | 1.80 |
| 19/03/1985 | M | 107.00 | 116.00 | 6.64 | 10.08 |
| 10/08/1985 | M | 108.00 | 115.00 | 4.65 | 8.21 |
| 26/06/1985 | F | 110.00 | 110.00 | -2.33 | 1.49 |
| 26/04/1985 | M | 111.00 | 115.00 | 1.68 | 5.63 |
| 21/05/1985 | F | 111.00 | 116.00 | 2.68 | 6.63 |
| 10/04/1985 | M | 113.00 | 110.00 | -5.31 | -1.09 |
| 21/03/1985 | M | 115.00 | 113.00 | -4.29 | 0.19 |
| 12/12/1984 | M | 119.00 | 122.00 | 0.74 | 5.75 |
| 21/07/1985 | F | 119.00 | 119.00 | -2.26 | 2.75 |
| Mean standardised scores for sample: | | 90.50 | 93.00 | | |

Average of your pupils' County Residuals: 1.267

# THE SUFFOLK SCHOOL IMPROVEMENT PROJECT IN PRIMARY SCHOOLS 1995

## RAISING PUPIL ACHIEVEMENT USING VALUE ADDED DATA

This paper introduces the Suffolk school improvement project for 1995 and invites you to take part.

**AIM:**

- to improve individual pupil progress by supporting schools in making fuller use of attainment data, particularly when setting improvement targets in the school development plan.

**SPECIFIC OBJECTIVES:**

- to provide schools with value added charts and tables showing the prior and present achievement of their pupils, enabling them to analyse learning progress at the individual, group and whole school level;

- to widen the understanding of the effective analysis of such data;

- to support schools in developing action strategies which lead to further improvements in individual pupil achievement;

- to develop further the culture of monitoring and evaluating achievement in schools for improvement purposes;

**THE METHOD**

Following the successful 1994 pilot, we have firmly established the value of the Suffolk Reading Test as an indicator of progress in the widest sense. This was demonstrated by the strong correlation between the 12+ score and the GCSE results of our 1994 sample of over 3700 pupils. This demonstrates the central importance of reading when it comes to access to learning throughout education. However, the 12+ score is also clearly an indicator of individual potential for progress in a wider range of cognitive areas than reading. It is for this reason that the Suffolk Reading Test is now recognised by NFER as a "first division" test for value added purposes.

The method of standard regression (best fit) that we are using is now widely accepted as being simple to understand and effective for "improvement" purposes. We are strongly supported in this approach by our consultant Professor John Gray of Cambridge University. It allows the progress of each individual to be measured over a period of time and to be compared with the typical progress of all pupils in the school and in the county. The data shows the effectiveness of the school in "adding value" irrespective of its catchment.

It is important to recognise the limitations of the data as well. As with any test a pupil can have a "bad day" and not demonstrate their true achievement. The test must have been properly administered to give a reliable result. It is therefore essential to treat the value

added result as an *indicator* alongside the other information that the school has about its pupils' progress. The importance of the data is its capacity to raise more and more questions about the achievement of pupils. It does not provide the solutions - teachers do.

The data will be confidential to the school and members of the advisory team. It will be for headteachers to decide how it is used. The 1994 pilot heads agreed that the school level information should not be published outside the school and the Project Team has been careful to minimise publicity about the project and avoid unhealthy press interest. The Education Committee has given the project its full backing. There is no question of the data ever being used to produce "league tables" or school by school comparisons in which individual schools can be identified.

## WHAT THE PROJECT TEAM WILL PROVIDE:

The 6+ and 8+ reading scores for all schools are already on our central database. Schools will not need to provide additional data for this comparison.

At the Area briefing meeting for participating headteachers in September 1995 the Project Team will provide:

- for **First Schools** a chart and data table showing the progress made by the 94/5 Year 4 cohort between 6+ and 8+ as measured by the Suffolk Reading Test;

- for **5-11 Primary and Junior Schools** a chart and data table showing the progress made by the 94/5 Year 4 cohort between 6+ and 8+ as measured by the Suffolk Reading Test, **AND** a chart and table showing the progress made by the 94/5 Year 6 cohort between 8+ and 10+ as measured by the Suffolk Reading Test;

- girls and boys will be identified separately in the charts and mean scores for each gender will be shown in the data tables;

- each chart will show the "county best fit lines" indicating the typical progress of all pupils in the county in 1994 and 1995;

- each chart will also show the 1995 "school best fit line" for comparison, provided the school has 30 or more pupils with complete data in the year group;

- schools which took part in the 1994 project will also have their 1994 school line plotted on their charts;

- a detailed briefing on how to interpret the charts and tables together with an explanatory paper;

For schools with less than 30 pupils in the cohort:

- extra guidance on how to make best use of the data given their small size of sample;

During September and October:

- a follow-up visit from a member of the advisory team to support further interpretation and investigation and ideas for action strategies to raise individual achievement;

**WHAT YOU WILL BE INVOLVED IN IF YOU JOIN:**

- **Attending the Area briefing meeting as follows:**

  Western Area at WSPDC 9. 30am - 12. 30 pm Friday 22nd September 1995
  Northern Area at NSPDC 9. 30am - 12. 30 pm Wednesday 20th September 1995
  Southern Area at SSPDC 9. 30am - 12. 30 pm Monday 25th September 1995

- **Arranging a meeting in school at which the headteacher and another senior member of staff discuss the data and their interpretation of it with a member of the advisory team.**

- **Considering the development of appropriate school strategies and action to raise pupil achievement;**

- **Attending an evaluation meeting at which you share your work with Area colleagues and the Project Team as follows:**

  **Western Area at WSPDC 9. 30am - 12. 30 pm Tuesday 9th January 1996**
  Northern Area at NSPDC 9. 30am - 12. 30 pm Wednesday 10th January 1996
  Southern Area at SSPDC 9. 30am - 12. 30 pm Friday 12th January 1996

**THE PROJECT TEAM:**

**The core team consists of the three senior advisers, a seconded headteacher as field liaison officer, a 14-19 adviser and a primary adviser. Roger Loose coordinates and takes responsibility for production and publication of the data to schools. In 1995 the core team will be supported by general advisers, particularly in the visiting of schools.**

**The work of the Project is steered by the Headteachers' Value Added Group chaired by** David Peachey, the County Education Officer. Headteachers from each phase and Area are **represented on this Group, which meets at least once a term.**

**INTENDED OUTCOMES:**

- **improved individual pupil achievement at all levels;**

- **an established "improvement" culture in schools focused on pupil attainment;**

- **a sharper focus on the relationship between school development planning and school improvement;**

**THE NEXT STEP FOR YOU:**

**If you wish to take part in the 1995 Project you should complete the enclosed proforma and return it to me by 26th May 1995. I shall then write to you confirming the final details of the briefing meeting in September. In order to keep the meetings to a manageable size only one person may represent each school and this must be the Headteacher, unless unavoidable absence makes it necessary to substitute a senior member of staff.**

# PRIMARY VALUE ADDED PROJECT 1995 REPLY SLIP

**Please return this form to Roger Loose at St Andrew House, County Hall, Ipswich IP4 1LJ by 26th May at the latest.**

Name of school.....

I wish to take part in the 1995 Primary Value Added Project as set out in the introductory paper and agree to the approach listed there.

Signed.....(Headteacher)

Date.....

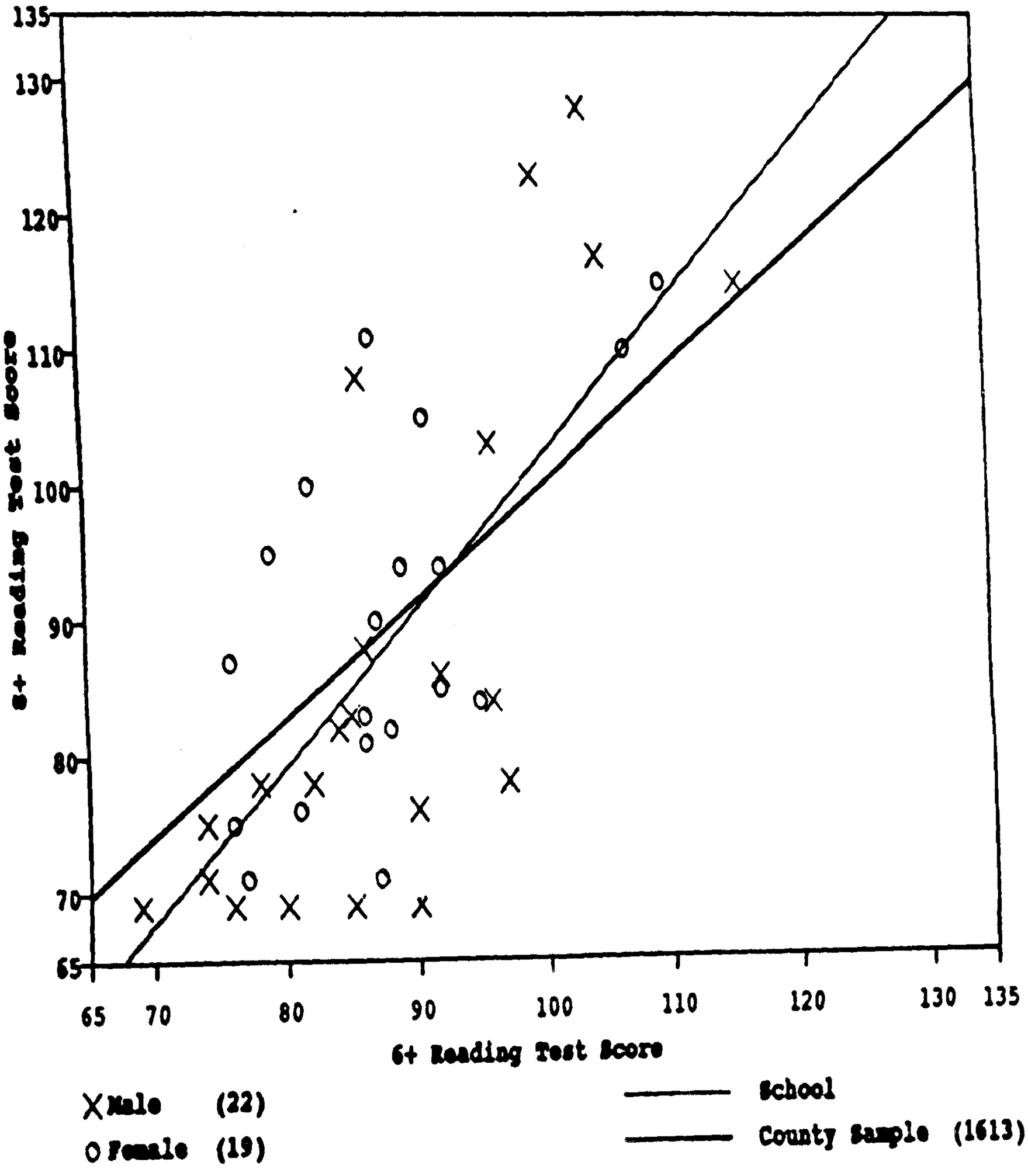
Space for you to add any comments you may wish to make:

## ANNEX: AN EXAMPLE CHART TO SHOW SOME ASPECTS OF THE VALUE ADDED DATA

The chart below is similar to that you might receive and contains the following information:

- each pupil is plotted at the intersection of their 6+ score and 8+ score;
- each boy and girl in the school year group are shown separately by means of a cross or a circle respectively;
- individual *progress* (as opposed to attainment) of each pupil can be judged directly from the chart relative to other pupils in the school or county; this is done by reference to how far a pupil is above or below the school or county line.

The darker county line shows the typical progress made by pupils of all abilities across the county. The lighter, broken school line shows the overall progress of the year group in the school. The relative positions of the two lines provide valuable information about the overall progress in the school compared with the progress in the county as a whole.




Headteachers will be given full support in interpreting their chart through the September briefing meeting, written guidance provided and through a visit by their link adviser or a member of the Project Team.

# APPENDIX 9 School Effectiveness: Model A

**Rank Order**

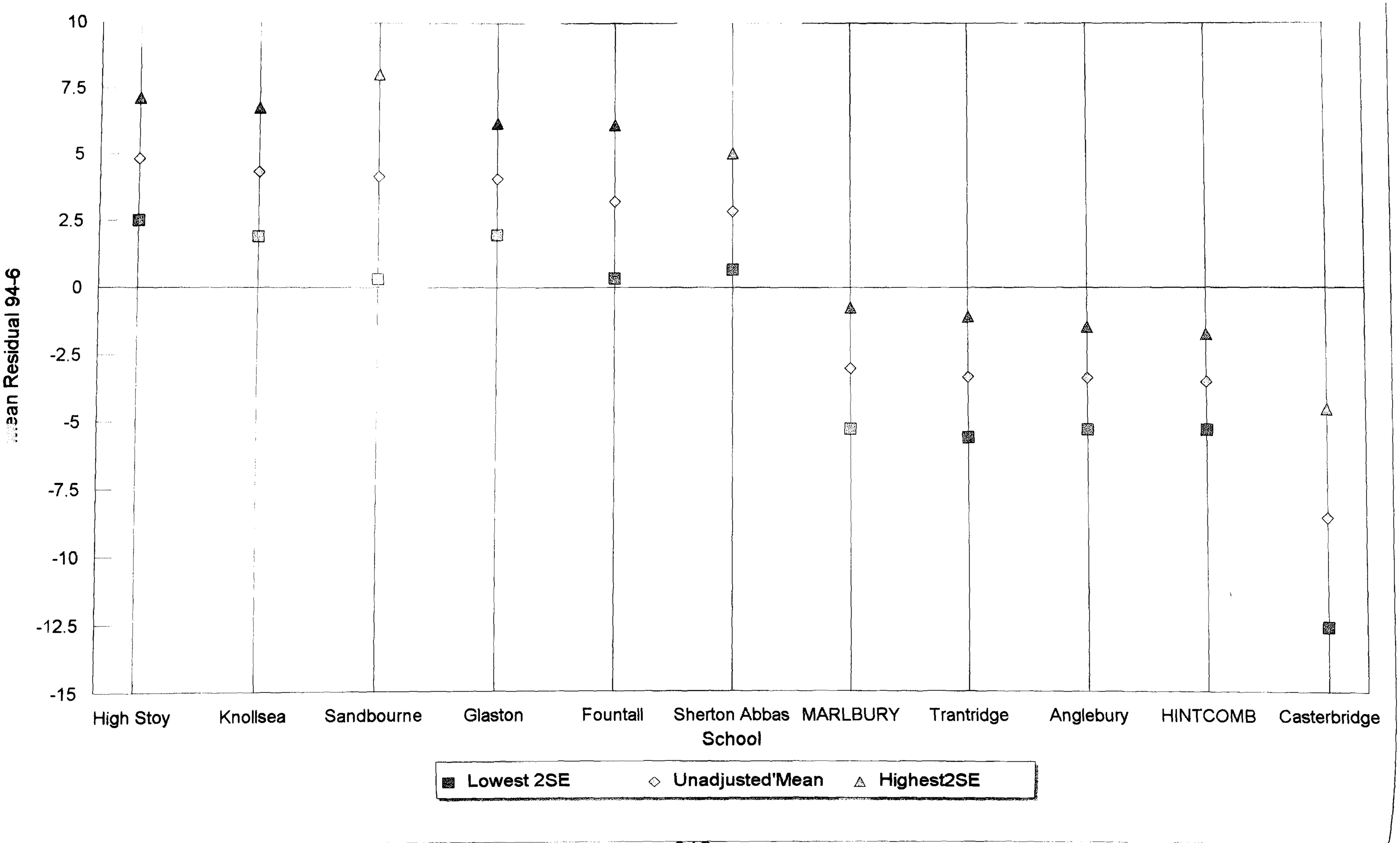
| School | 94/6 Mean Residual | School | 94/6 Mean Residual | Effectiveness Categories |
|---|---|---|---|---|
| High Stoy | **4.81** | High Stoy | **4.81** | Most Effective |
| Knollsea | **4.33** | Knollsea | **4.33** | Most Effective |
| Sandbourne | **4.17** | Sandbourne | **4.17** | Most Effective |
| Glaston | **4.07** | Glaston | **4.07** | Most Effective |
| Fountall | **3.22** | Fountall | **3.22** | Most Effective |
| Sherton Abbas | **2.85** | Sherton Abbas | **2.85** | Most Effective |
| Wellbridge | **1.54** | | | |
| Blackmore | **1.45** | Wellbridge | **1.54** | Average |
| Budmouth | **1.33** | Blackmore | **1.45** | Average |
| Overcombe | **1.32** | Budmouth | **1.33** | Average |
| Idmouth | **1.27** | Overcombe | **1.32** | Average |
| Egdon Heath | **1.26** | Idmouth | **1.27** | Average |
| Bulbarrow | **1.05** | Egdon Heath | **1.26** | Average |
| Marygreen | **0.56** | Bulbarrow | **1.05** | Average |
| Kings Hintock | **0.46** | Marygreen | **0.56** | Average |
| Lulwind | **0.24** | Kings Hintock | **0.46** | Average |
| Wintoncester | **0.19** | Lulwind | **0.24** | Average |
| Mellstock | **-0.01** | Wintoncester | **0.19** | Average |
| Aldbrickham | **-0.06** | Mellstock | **-0.01** | Average |
| Chase | **-0.21** | Aldbrickham | **-0.06** | Average |
| Port Bredy | **-0.7** | Chase | **-0.21** | Average |
| Flintcomb | **-0.77** | Port Bredy | **-0.7** | Average |
| Wingreen | **-0.9** | Flintcomb | **-0.77** | Average |
| Melchester | **-1.47** | Wingreen | **-0.9** | Average |
| Stourhead | **-1.48** | Melchester | **-1.47** | Average |
| Shaston | **-1.64** | Stourhead | **-1.48** | Average |
| Chalk Newton | **-1.71** | Shaston | **-1.64** | Average |
| Marlbury | **-3.03** | Chalk Newton | **-1.71** | Average |
| Trantridge | **-3.36** | | | |
| Anglebury | **-3.4** | Marlbury | **-3.03** | Least Effective |
| Hintcomb | **-3.54** | Trantridge | **-3.36** | Least Effective |
| Casterbridge | **-5.88** | Anglebury | **-3.4** | Least Effective |
| | | Hintcomb | **-3.54** | Least Effective |
| ***Range*** | ***10.69*** | Casterbridge | **-5.88** | Least Effective |

# APPENDIX 10

## School Effectiveness: Model B

| School | 94/6 Mean Residual | Quartile |
|---|---|---|
| High Stoy | **4.81** | Upper |
| Knollsea | **4.33** | Upper |
| Sandbourne | **4.17** | Upper |
| Glaston | **4.07** | Upper |
| Fountall | **3.22** | Upper |
| Sherton Abbas | **2.85** | Upper |
| Wellbridge | **1.54** | Upper |
| Blackmore | **1.45** | Upper |
| | | |
| Budmouth | **1.33** | Middle |
| Overcombe | **1.32** | Middle |
| Idmouth | **1.27** | Middle |
| Egdon Heath | **1.26** | Middle |
| Bulbarrow | **1.05** | Middle |
| Marygreen | **0.56** | Middle |
| Kings Hintock | **0.46** | Middle |
| Lulwind | **0.24** | Middle |
| Wintoncester | **0.19** | Middle |
| Mellstock | **-0.01** | Middle |
| Aldbrickham | **-0.06** | Middle |
| Chase | **-0.21** | Middle |
| Port Bredy | **-0.7** | Middle |
| Flintcomb | **-0.77** | Middle |
| Wingreen | **-0.9** | Middle |
| Melchester | **-1.47** | Middle |
| | | |
| Stourhead | **-1.48** | Lower |
| Shaston | **-1.64** | Lower |
| Chalk Newton | **-1.71** | Lower |
| Marlbury | **-3.03** | Lower |
| Trantridge | **-3.36** | Lower |
| Anglebury | **-3.4** | Lower |
| Hintcomb | **-3.54** | Lower |
| Casterbridge | **-5.88** | Lower |
| | | |
| ***Range*** | ***10.69*** | |
| ***Top-Median*** | ***4.57*** | |
| ***Median- Bottom*** | ***6.12*** | |

# Appendix 11: Chart to show confidence limits for Model A outliers



# APPENDIX 12

## School Improvement Model C

| School | Category | 1994 residual | 1995 residual | 1996 residual |
|---|---|---|---|---|
| Bulbarrow | Improving/Effective | -2.32 | 3.75 | 1.71 |
| Idmouth | Improving/Effective | -0.44 | 0.59 | 3.67 |
| Egdon Heath | Improving/Effective | -0.42 | 3.34 | 0.87 |
| Marygreen | Improving/Effective | -2.91 | 1.02 | 3.58 |
| Aldbrickham | Declining/Ineffective | 2.11 | -1.02 | -1.27 |
| Chalk Newton | Declining/Ineffective | 0.16 | -4.47 | -0.81 |
| Port Bredy | Declining/Ineffective | 1.27 | -0.76 | -2.6 |
| Lulwind | Declining/Ineffective | 3.08 | -2.13 | -0.21 |
| Chase | Declining/Ineffective | 0.18 | -0.32 | -0.49 |
| Kings Hintock | Declining/Ineffective | 3.28 | -1.54 | -0.35 |
| Sandbourne | Stable/Effective | 2.86 | 3.15 | 6.51 |
| Blackmore | Stable/Effective | 2.25 | 1.55 | 0.54 |
| Overcombe | Stable/Effective | 0.03 | 2.92 | 1 |
| Budmouth | Stable/Effective | 2.37 | 0.22 | 1.41 |
| Glaston | Stable/Effective | 6.06 | 2.23 | 3.93 |
| Knollsea | Stable/Effective | 3.17 | 4.74 | 5.09 |
| Sherton Abbas | Stable/Effective | 3.23 | 2.28 | 3.03 |
| High Stoy | Stable/Effective | 1.64 | 4.44 | 8.36 |
| Fountall | Stable/Effective | 8.5 | 0.31 | 0.84 |
| Trantridge | Stable/Ineffective | -0.36 | -6.83 | -2.88 |
| Wingreen | Stable/Ineffective | -1.3 | -1.1 | -0.303 |
| Marlbury | Stable/Ineffective | -3.09 | -2.13 | -3.88 |
| Stourhead | Stable/Ineffective | -2.59 | -1.31 | -0.55 |
| Melchester | Stable/Ineffective | -1.23 | -0.65 | -2.54 |
| Anglebury | Stable/Ineffective | -3.49 | -4.48 | -2.24 |
| Hintcomb | Stable/Ineffective | -2.67 | -3.22 | -4.72 |
| Casterbridge | Stable/Ineffective | -8 | -8.2 | -1.44 |
| Wintoncester | Erratic | 0.35 | 0.45 | -0.23 |
| Mellstock | Erratic | -0.17 | 4.76 | -4.61 |
| Wellbridge | Erratic | 1 | -0.67 | 4.62 |
| Flintcomb | Erratic | -2 | 1.96 | -2.26 |
| Shaston | Erratic | -5.41 | 1.2 | -0.71 |

| Categories | Criteria |
|---|---|
| *Improving/Effective* | 94 residual negative; 95 and 96 residuals positive |
| *Stable/Effective:* | 94, 95 and 96 residuals positive |
| *Stable/Ineffective:* | 94, 95 and 96 residuals negative |
| *Declining/Ineffectiv* | 94 residual positive; 95 and 96 residuals negative |

## APPENDIX 13

## School Improvement Model D

| School | Category | 1994 residual | 1995 residual | 1996 residual |
|---|---|---|---|---|
| Egdon Heath | Improving | -0.42 | 3.34 | 0.87 |
| Sandbourne | Improving | 2.86 | 3.15 | 6.51 |
| Marygreen | Improving | -2.91 | 1.02 | 3.58 |
| Knollsea | Improving | 3.17 | 4.74 | 5.09 |
| High Stoy | Improving | 1.64 | 4.44 | 8.36 |
| Bulbarrow | Improving | -2.32 | 3.75 | 1.71 |
| Idmouth | Improving | -0.44 | 0.59 | 3.67 |
| Aldbrickham | Declining | 2.11 | -1.02 | -1.27 |
| Chase | Declining | 0.18 | -0.32 | -0.49 |
| Port Bredy | Declining | 1.27 | -0.76 | -2.6 |
| Lulwind | Declining | 3.08 | -2.13 | -0.21 |
| Hintcomb | Declining | -2.67 | -3.22 | -4.72 |
| Kings Hintock | Declining | 3.28 | -1.54 | -0.35 |
| Chalk Newton | Declining | 0.16 | -4.47 | -0.81 |
| Blackmore | Declining | 2.25 | 1.55 | 0.54 |
| Fountall | Stable/Effective | 8.5 | 0.31 | 0.84 |
| Sherton Abbas | Stable/Effective | 3.23 | 2.28 | 3.03 |
| Glaston | Stable/Effective | 6.06 | 2.23 | 3.93 |
| Budmouth | Stable/Effective | 2.37 | 0.22 | 1.41 |
| Overcombe | Stable/Effective | 0.03 | 2.92 | 1 |
| Marlbury | Stable/Ineffective | -3.09 | -2.13 | -3.88 |
| Melchester | Stable/Ineffective | -1.23 | -0.65 | -2.54 |
| Stourhead | Stable/Ineffective | -2.59 | -1.31 | -0.55 |
| Trantridge | Stable/Ineffective | -0.36 | -6.83 | -2.88 |
| Anglebury | Stable/Ineffective | -3.49 | -4.48 | -2.24 |
| Wingreen | Stable/Ineffective | -1.3 | -1.1 | -0.303 |
| Casterbridge | Stable/Ineffective | -8 | -8.2 | -1.44 |
| Wintoncester | Erratic | 0.35 | 0.45 | -0.23 |
| Flintcomb | Erratic | -2 | 1.96 | -2.26 |
| Wellbridge | Erratic | 1 | -0.67 | 4.62 |
| Shaston | Erratic | -5.41 | 1.2 | -0.71 |
| Mellstock | Erratic | -0.17 | 4.76 | -4.61 |

| Categories | Criteria |
|---|---|
| **Improving:** | 94 residual negative, 95 and 96 positive; residuals improving 94-96 |
| **Declining:** | 94 residual positive, 95 and 96 negative; residuals declining 94-96 |
| **Stable/Effective:** | 94, 95 and 96 residuals positive |
| **Stable/Ineffective:** | 94, 95 and 96 residuals negative |

## APPENDIX 14: Calculating the School Effect using Simple Linear Regression

**Step 1**

The adjusted value added residual was arrived at by using the simple linear regression formula: $yi = a + Bxi + ei$

where:

$yi$ = average value added residual for the period 1994-6

a = intercept (1.93)

B = slope (-0.07)

$xi$ = the averaged values over three years for Free School Meals

$ei$ = error

The values for "B" and "a" were found from a regression analysis (see Appendix15 p.320, and Appendix16 p.321).

**Step 2**

The simple linear regression formula was developed further:

$ei = yi - Bxi - a$

This translates to: error (*i*) = value added residual - (-0.07) FSM - intercept

**Step 3**

Error ($ei$) consists of two parts: the random error($eii$) and the school effect

Hence:

school effect + random error($eii$) = value added residual - (-0.07) FSM - intercept

school effect = value added residual - (-0.07) FSM - intercept - random error

**Step 4**

In calculating the school effect, the random error was initially discarded and the mean figure used so that results centred around zero[1]. The actual formula used was therefore:

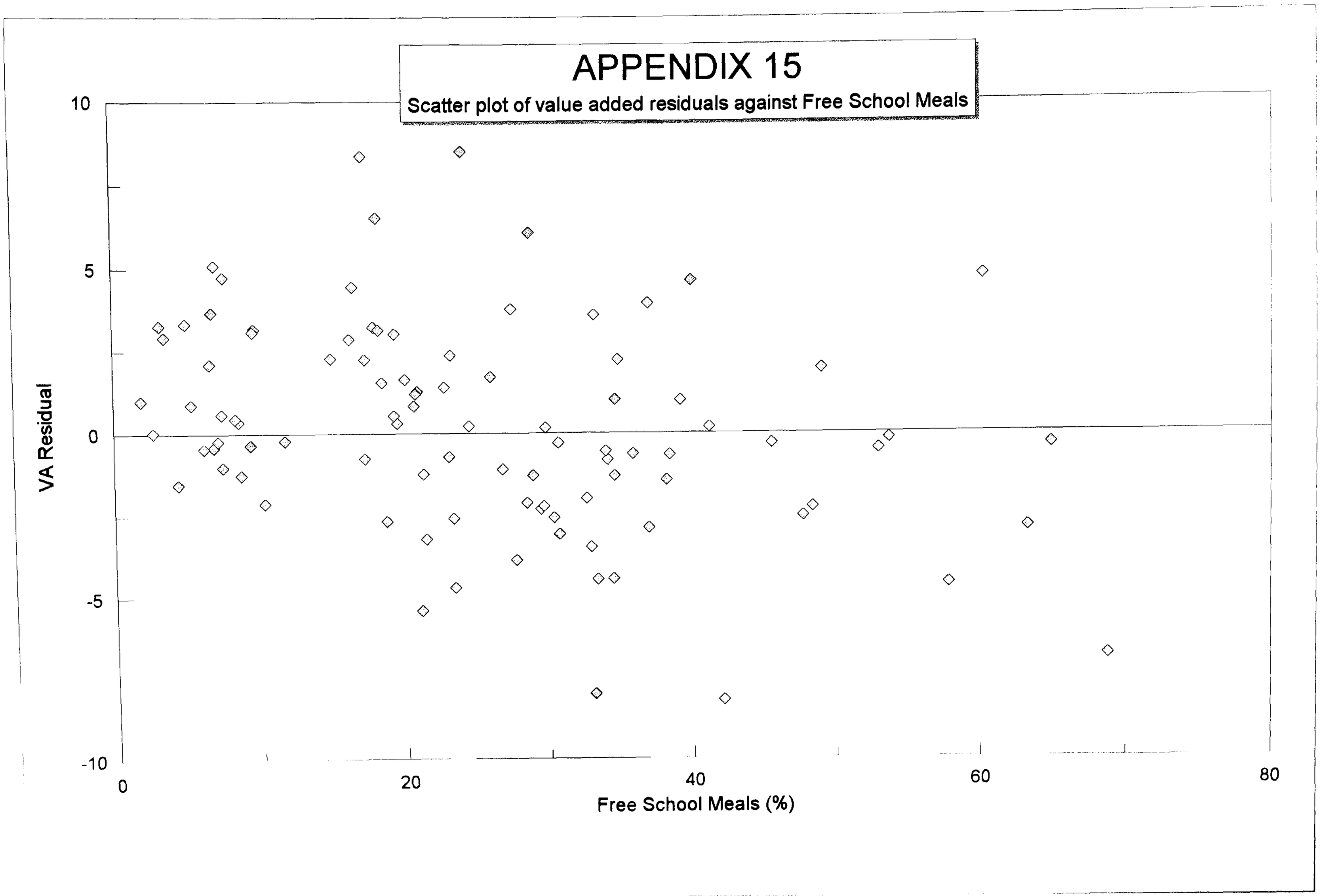
school effect = value added residual - (-0.07) FSM - intercept

---

[1] Error bars were applied to the resulting outlier groups to test for overlap in means (see Appendix 20 p. 325, and Appendix 22 p. 327)

# APPENDIX 15

Scatter plot of value added residuals against Free School Meals



# APPENDIX 16

## Regression Analysis Using Average 94-96 datasets

| School | Mean Residual 1994 to 1996 | Mean FSM (%) 1994 to 1996 |
|---|---|---|
| Aldbrickham | -0.06 | 7.59 |
| Anglebury | -3.4 | 31.95 |
| Blackmore | 1.45 | 18.35 |
| Budmouth | 1.33 | 23.51 |
| Bulbarrow | 1.05 | 27.64 |
| Casterbridge | -5.88 | 37.79 |
| Chalk Newton | -1.71 | 32.77 |
| Chase | -0.21 | 46.58 |
| Egdon Heath | 1.26 | 5.72 |
| Flintcomb | -0.77 | 43.34 |
| Fountall | 3.22 | 21.46 |
| Glaston | 4.07 | 33.55 |
| High Stoy | 4.81 | 17.97 |
| Hintcomb | -3.54 | 21.2 |
| Idmouth | 1.27 | 6.79 |
| Kings Hintock | 0.46 | 5.65 |
| Knollsea | 4.33 | 8.13 |
| Lulwind | 0.24 | 10.56 |
| Marlbury | -3.03 | 28.94 |
| Marygreen | 0.56 | 34.93 |
| Melchester | -1.47 | 34.95 |
| Mellstock | -0.01 | 57.25 |
| Overcombe | 1.32 | 2.7 |
| Port Bredy | -0.7 | 20.51 |
| Sandbourne | 4.17 | 17.6 |
| Shaston | -1.64 | 21.65 |
| Sherton Abbas | 2.85 | 17.45 |
| Stourhead | -1.48 | 32.95 |
| Trantridge | -3.36 | 65.71 |
| Wellbridge | 1.54 | 39.21 |
| Wingreen | -0.9 | 28.78 |
| Wintoncester | 0.19 | 8.01 |

| | |
|---|---|
| **s. e. of slope:** | **0.03426226** |
| **X Coefficient** | **-0.0685719** |
| **Intercept** | **1.92452558** |
| St error of Y est | 2.33096814 |
| R squared | 0.17328662 |
| **Correlation** | **-0.4162771** |

# APPENDIX 17

## Adjusting Residuals using Regression Analysis

| School | 94/6 Mean Residual | 94/6 FSM | Adjusted Residual | Rounded | se of+0.034 | se of-0.034 |
|---|---|---|---|---|---|---|
| Glaston | 4.07 | 33.55 | 4.4885 | **4.49** | 4.5225 | 4.4545 |
| High Stoy | 4.81 | 17.97 | 4.1379 | **4.14** | 4.1719 | 4.1039 |
| Sandbourne | 4.17 | 17.6 | 3.472 | **3.47** | 3.506 | 3.438 |
| Knollsea | 4.33 | 8.13 | 2.9691 | **2.97** | 3.0031 | 2.9351 |
| Fountall | 3.22 | 21.46 | 2.7922 | **2.79** | 2.8262 | 2.7582 |
| Wellbridge | 1.54 | 39.21 | 2.3547 | **2.35** | 2.3887 | 2.3207 |
| Sherton Abbas | 2.85 | 17.45 | 2.1415 | **2.14** | 2.1755 | 2.1075 |
| Mellstock | -0.01 | 57.25 | 2.0675 | **2.07** | 2.1015 | 2.0335 |
| Chase | -0.21 | 46.58 | 1.1206 | **1.12** | 1.1546 | 1.0866 |
| Marygreen | 0.56 | 34.93 | 1.0751 | **1.08** | 1.1091 | 1.0411 |
| Bulbarrow | 1.05 | 27.64 | 1.0548 | **1.05** | 1.0888 | 1.0208 |
| Budmouth | 1.33 | 23.51 | 1.0457 | **1.05** | 1.0797 | 1.0117 |
| Blackmore | 1.45 | 18.35 | 0.8045 | **0.8** | 0.8385 | 0.7705 |
| Flintcomb | -0.77 | 43.34 | 0.3338 | **0.33** | 0.3678 | 0.2998 |
| Idmouth | 1.27 | 6.79 | -0.1847 | **-0.18** | -0.1507 | -0.2187 |
| Egdon Heath | 1.26 | 5.72 | -0.2696 | **-0.27** | -0.2356 | -0.3036 |
| Overcombe | 1.32 | 2.7 | -0.421 | **-0.42** | -0.387 | -0.455 |
| Trantridge | -3.36 | 65.71 | -0.6903 | **-0.69** | -0.6563 | -0.7243 |
| Wingreen | -0.9 | 28.78 | -0.8154 | **-0.82** | -0.7814 | -0.8494 |
| Lulwind | 0.24 | 10.56 | -0.9508 | **-0.95** | -0.9168 | -0.9848 |
| Melchester | -1.47 | 34.95 | -0.9535 | **-0.95** | -0.9195 | -0.9875 |
| Kings Hintock | 0.46 | 5.65 | -1.0745 | **-1.07** | -1.0405 | -1.1085 |
| Stourhead | -1.48 | 32.95 | -1.1035 | **-1.1** | -1.0695 | -1.1375 |
| Wintoncester | 0.19 | 8.01 | -1.1793 | **-1.18** | -1.1453 | -1.2133 |
| Port Bredy | -0.7 | 20.51 | -1.1943 | **-1.19** | -1.1603 | -1.2283 |
| Chalk Newton | -1.71 | 32.77 | -1.3461 | **-1.35** | -1.3121 | -1.3801 |
| Aldbrickham | -0.06 | 7.59 | -1.4587 | **-1.46** | -1.4247 | -1.4927 |
| Shaston | -1.64 | 21.65 | -2.0545 | **-2.05** | -2.0205 | -2.0885 |
| Marlbury | -3.03 | 28.94 | -2.9342 | **-2.93** | -2.9002 | -2.9682 |
| Anglebury | -3.4 | 31.95 | -3.0935 | **-3.09** | -3.0595 | -3.1275 |
| Hintcomb | -3.54 | 21.2 | -3.986 | **-3.99** | -3.952 | -4.02 |
| Casterbridge | -5.88 | 37.79 | -5.1647 | **-5.16** | -5.1307 | -5.1987 |

**Residuals adjustment = Mean Residual 94/6 - (-0.07) Mean FSM - 1.93 (intercept)**

# APPENDIX 18 : Chart to Show the Impact of Adjusting Mean Residuals for FSM on the Rank Order

| UNADJUSTED RESIDUALS | | | RESIDUALS ADJUSTED for FSM | | | |
|---|---|---|---|---|---|---|
| **School** | **94/6 Mean Residual** | **St. Dev.** | **School** | **94/6 Adj. Residual** | **St. Dev.** | **Movement St.Dev.** |
| High Stoy | **4.81** | **3** | Glaston | **4.49** | **2** | static |
| Knollsea | **4.33** | **2** | High Stoy | **4.14** | **2** | down |
| Sandbourne | **4.17** | **2** | Sandbourne | **3.48** | **2** | static |
| Glaston | **4.07** | **2** | Knollsea | **2.97** | **2** | static |
| Fountall | **3.22** | **2** | Fountall | **2.79** | **2** | static |
| Sherton Abbas | **2.85** | **2** | Wellbridge | **2.47** | **2** | up |
| Wellbridge | **1.54** | **1** | Sherton Abbas | **2.14** | **1** | down |
| Blackmore | **1.45** | **1** | Mellstock | **2.07** | **1** | up |
| Budmouth | **1.33** | **1** | Chase | **1.12** | **1** | up |
| Overcombe | **1.32** | **1** | Marygreen | **1.08** | **1** | static |
| Idmouth | **1.27** | **1** | Budmouth | **1.05** | **1** | static |
| Egdon Heath | **1.26** | **1** | Bulbarrow | **1.05** | **1** | static |
| Bulbarrow | **1.05** | **1** | Blackmore | **0.8** | **1** | static |
| Marygreen | **0.56** | **1** | Flintcomb | **0.34** | **1** | up |
| Kings Hintock | **0.46** | **1** | Idmouth | **-0.18** | **-1** | down |
| Lulwind | **0.24** | **1** | Egdon Heath | **-0.27** | **-1** | down |
| Wintoncester | **0.19** | **1** | Overcombe | **-0.42** | **-1** | down |
| Mellstock | **-0.01** | **-1** | Trantridge | **-0.69** | **-1** | up |
| Aldbrickham | **-0.06** | **-1** | Wingreen | **-0.82** | **-1** | static |
| Chase | **-0.21** | **-1** | Lulwind | **-0.94** | **-1** | down |
| Port Bredy | **-0.7** | **-1** | Melchester | **-0.96** | **-1** | static |
| Flintcomb | **-0.77** | **-1** | Kings Hintock | **-1.07** | **-1** | down |
| Wingreen | **-0.9** | **-1** | Stourhead | **-1.11** | **-1** | static |
| Melchester | **-1.47** | **-1** | Wintoncester | **-1.18** | **-1** | down |
| Stourhead | **-1.48** | **-1** | Port Bredy | **-1.19** | **-1** | static |
| Shaston | **-1.64** | **-1** | Chalk Newton | **-1.34** | **-1** | static |
| Chalk Newton | **-1.71** | **-1** | Aldbrickham | **-1.46** | **-1** | static |
| Marlbury | **-3.03** | **-2** | Shaston | **-2.05** | **-1** | static |
| Trantridge | **-3.36** | **-2** | Marlbury | **-2.94** | **-2** | static |
| Anglebury | **-3.4** | **-2** | Anglebury | **-3.1** | **-2** | static |
| Hintcomb | **-3.54** | **-2** | Hintcomb | **-3.98** | **-2** | static |
| Casterbridge | **-5.88** | **-3** | Casterbridge | **-5.2** | **-3** | static |
| **St DEV** | **2.48** | | **St DEV** | **2.26** | | |
| ***Range*** | ***10.69*** | | ***Range*** | ***9.69*** | | |

# APPENDIX 19

## School Effectiveness Model E

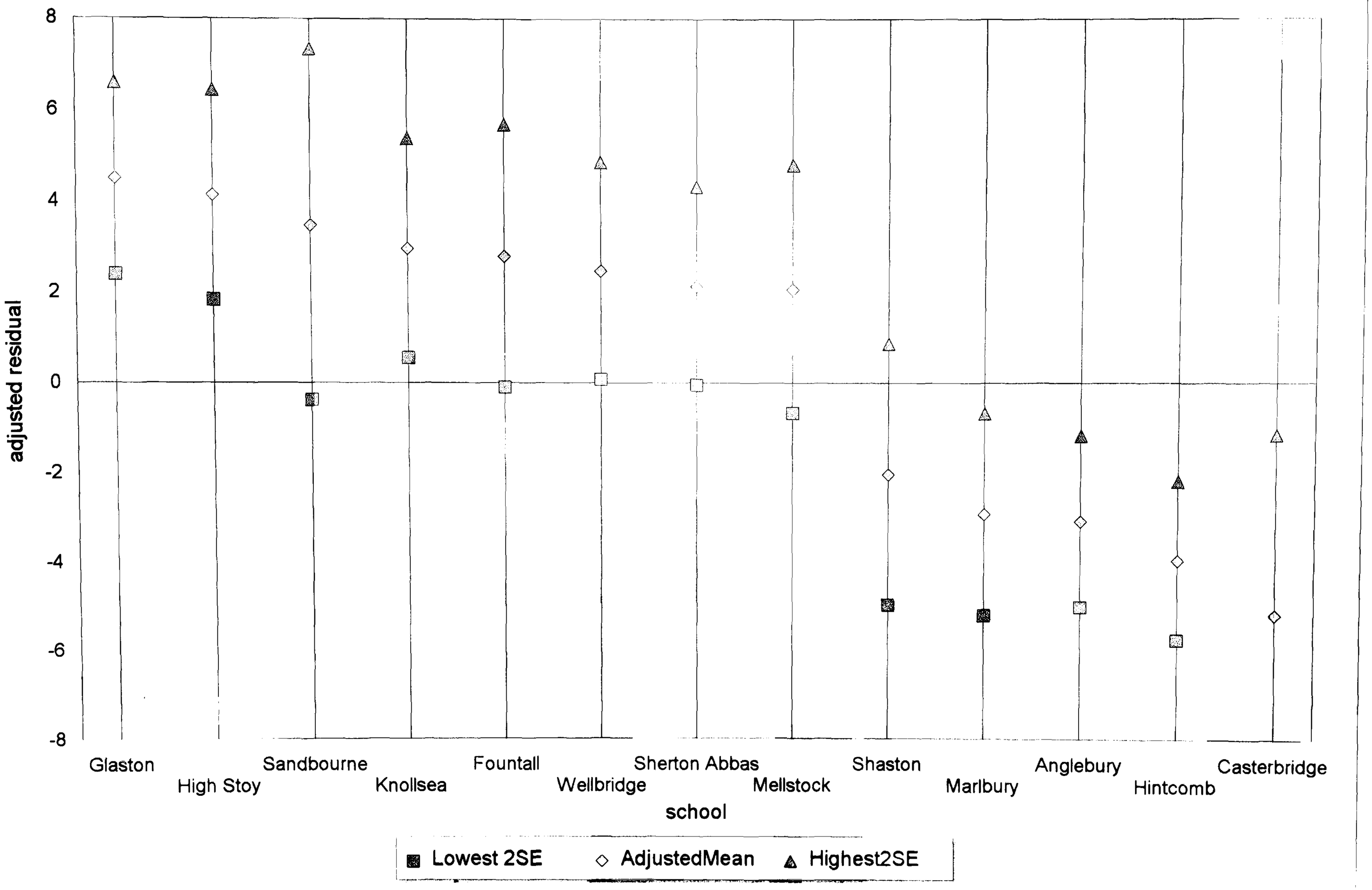
### Model A

| School | 94/6 mean residual | Effectiveness Categories |
|---|---|---|
| High Stoy | 4.81 | Most Effective |
| Knollsea | 4.33 | Most Effective |
| Sandbourne | 4.17 | Most Effective |
| Glaston | 4.07 | Most Effective |
| Fountall | 3.22 | Most Effective |
| Sherton Abbas | 2.85 | Most Effective |
| Wellbridge | 1.54 | Average |
| Blackmore | 1.45 | Average |
| Budmouth | 1.33 | Average |
| Overcombe | 1.32 | Average |
| Idmouth | 1.27 | Average |
| Egdon Heath | 1.26 | Average |
| Bulbarrow | 1.05 | Average |
| Marygreen | 0.56 | Average |
| Kings Hintock | 0.46 | Average |
| Lulwind | 0.24 | Average |
| Wintoncester | 0.19 | Average |
| Mellstock | -0.01 | Average |
| Aldbrickham | -0.06 | Average |
| Chase | -0.21 | Average |
| Port Bredy | -0.7 | Average |
| Flintcomb | -0.77 | Average |
| Wingreen | -0.9 | Average |
| Melchester | -1.47 | Average |
| Stourhead | -1.48 | Average |
| Shaston | -1.64 | Average |
| Chalk Newton | -1.71 | Average |
| Marlbury | -3.03 | Least Effective |
| Trantridge | -3.36 | Least Effective |
| Anglebury | -3.4 | Least Effective |
| Hintcomb | -3.54 | Least Effective |
| Casterbridge | -5.88 | Least Effective |

### Model E

| School | 94/6 adj. residual | Effectiveness Categories |
|---|---|---|
| Glaston | 4.49 | Most Effective |
| High Stoy | 4.14 | Most Effective |
| Sandbourne | 3.48 | Most Effective |
| Knollsea | 2.97 | Most Effective |
| Fountall | 2.79 | Most Effective |
| Wellbridge | 2.47 | Most Effective |
| Sherton Abbas | 2.14 | |
| Mellstock | 2.07 | Average |
| | | Average |
| Chase | 1.12 | Average |
| Marygreen | 1.08 | Average |
| Budmouth | 1.05 | Average |
| Bulbarrow | 1.05 | Average |
| Blackmore | 0.8 | Average |
| Flintcomb | 0.34 | Average |
| Idmouth | -0.18 | Average |
| Egdon Heath | -0.27 | Average |
| Overcombe | -0.42 | Average |
| Trantridge | -0.69 | Average |
| Wingreen | -0.82 | Average |
| Lulwind | -0.94 | Average |
| Melchester | -0.96 | Average |
| Kings Hintock | -1.07 | Average |
| Stourhead | -1.11 | Average |
| Wintoncester | -1.18 | Average |
| Port Bredy | -1.19 | Average |
| Chalk Newton | -1.34 | Average |
| Aldbrickham | -1.46 | Average |
| Shaston | -2.05 | Least Effective |
| Marlbury | -2.94 | Least Effective |
| Anglebury | -3.1 | Least Effective |
| Hintcomb | -3.98 | Least Effective |
| Casterbridge | -5.2 | Least Effective |

# APPENDIX 20: Chart to Show Confidence Limits for Model E Outliers



# APPENDIX 21 School Effectiveness: Model F

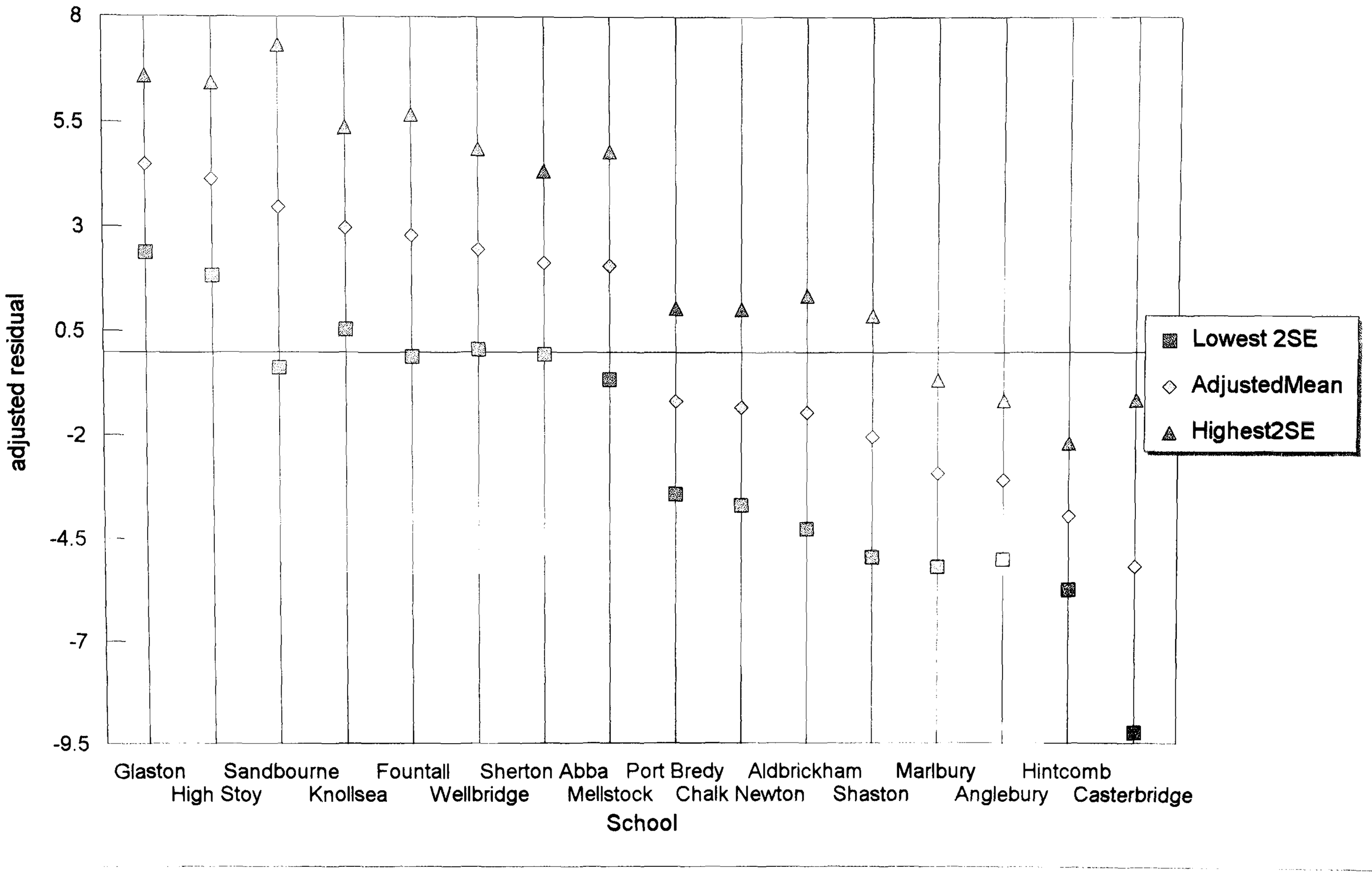
## Model B

| School | 94/6 Mean Residual | Quartile |
|---|---|---|
| High Stoy | **4.81** | Upper |
| Knollsea | **4.33** | Upper |
| Sandbourne | **4.17** | Upper |
| Glaston | **4.07** | Upper |
| Fountall | **3.22** | Upper |
| Sherton Abbas | **2.85** | Upper |
| Wellbridge | **1.54** | Upper |
| Blackmore | **1.45** | Upper |
| Budmouth | **1.33** | Middle |
| Overcombe | **1.32** | Middle |
| Idmouth | **1.27** | Middle |
| Egdon Heath | **1.26** | Middle |
| Bulbarrow | **1.05** | Middle |
| Marygreen | **0.56** | Middle |
| Kings Hintock | **0.46** | Middle |
| Lulwind | **0.24** | Middle |
| Wintoncester | **0.19** | Middle |
| Mellstock | **-0.01** | Middle |
| Aldbrickham | **-0.06** | Middle |
| Chase | **-0.21** | Middle |
| Port Bredy | **-0.7** | Middle |
| Flintcomb | **-0.77** | Middle |
| Wingreen | **-0.9** | Middle |
| Melchester | **-1.47** | Middle |
| Stourhead | **-1.48** | Lower |
| Shaston | **-1.64** | Lower |
| Chalk Newton | **-1.71** | Lower |
| Marlbury | **-3.03** | Lower |
| Trantridge | **-3.36** | Lower |
| Anglebury | **-3.4** | Lower |
| Hintcomb | **-3.54** | Lower |
| Casterbridge | **-5.88** | Lower |
| ***Range*** | ***10.69*** | |
| ***Top-Median*** | ***4.57*** | |
| ***Median- Bottor*** | ***6.12*** | |

## Model F

| School | 94/6 Adjust. Residual | Quartile | Movement |
|---|---|---|---|
| Glaston | **4.49** | Upper | static |
| High Stoy | **4.14** | Upper | static |
| Sandbourne | **3.48** | Upper | static |
| Knollsea | **2.97** | Upper | static |
| Fountall | **2.79** | Upper | static |
| Wellbridge | **2.47** | Upper | static |
| Sherton Abbas | **2.14** | Upper | static |
| Mellstock | **2.07** | Upper | up |
| Chase | **1.12** | Middle | static |
| Marygreen | **1.08** | Middle | static |
| Budmouth | **1.05** | Middle | static |
| Bulbarrow | **1.05** | Middle | static |
| Blackmore | **0.8** | Middle | down |
| Flintcomb | **0.34** | Middle | static |
| Idmouth | **-0.18** | Middle | static |
| Egdon Heath | **-0.27** | Middle | static |
| Overcombe | **-0.42** | Middle | static |
| Trantridge | **-0.69** | Middle | up |
| Wingreen | **-0.82** | Middle | static |
| Lulwind | **-0.94** | Middle | static |
| Melchester | **-0.96** | Middle | static |
| Kings Hintock | **-1.07** | Middle | static |
| Stourhead | **-1.11** | Middle | up |
| Wintoncester | **-1.18** | Middle | static |
| Port Bredy | **-1.19** | Lower | down |
| Chalk Newton | **-1.34** | Lower | static |
| Aldbrickham | **-1.46** | Lower | down |
| Shaston | **-2.05** | Lower | static |
| Marlbury | **-2.94** | Lower | static |
| Anglebury | **-3.1** | Lower | static |
| Hintcomb | **-3.98** | Lower | static |
| Casterbridge | **-5.2** | Lower | static |
| ***Range*** | ***9.69*** | | |
| ***Top-Median*** | ***4.66*** | | |
| ***Median- Bottor*** | ***4.95*** | | |

# APPENDIX 22: Chart to Show Confidence Limits for Model F Outliers



## APPENDIX 23 School Improvement Model G

| School | Categories | 1994 residual | 1995 residual | 1996 residual |
|---|---|---|---|---|
| Bulbarrow | Impoving/Effective | -2.2 | 3.75 | 1.6 |
| Marygreen | Impoving/Effective | -2.3 | 1.51 | 3.98 |
| Aldbrickham | Declining/Ineffective | 0.64 | -2.4 | -2.59 |
| Chalk Newton | Declining/Ineffective | 0.32 | -4 | -0.35 |
| Kings Hintock | Declining/Ineffective | 1.58 | -3.2 | -1.62 |
| Lulwind | Declining/Ineffective | 1.82 | -3.3 | -1.32 |
| Port Bredy | Declining/Ineffective | 0.8 | -1.5 | -2.9 |
| Trantridge | Declining/Ineffective | 2.26 | -3.9 | -0.38 |
| Chase | Stable/Effective | 1.13 | 0.94 | 1.29 |
| Glaston | Stable/Effective | 6.15 | 2.74 | 4.59 |
| Sherton Abbas | Stable/Effective | 2.6 | 1.4 | 2.46 |
| Wellbridge | Stable/Effective | 1.81 | 0.09 | 5.49 |
| Knollsea | Stable/Effective | 1.92 | 3.34 | 3.65 |
| High Stoy | Stable/Effective | 1.12 | 3.67 | 7.64 |
| Budmouth | Stable/Effective | 2.07 | 0 | 1.08 |
| Anglebury | Stable/Ineffective | -3.1 | -4.1 | -2.1 |
| Marlbury | Stable/Ineffective | -2.9 | -2.1 | -3.87 |
| Melchester | Stable/Ineffective | -1.7 | -0.1 | -1.13 |
| Stourhead | Stable/Ineffective | -2.4 | -0.8 | -0.1 |
| Wingreen | Stable/Ineffective | -1.2 | -1.12 | -0.09 |
| Wintoncester | Stable/Ineffective | -1 | -0.9 | -1.66 |
| Hintcomb | Stable/Ineffective | -3.3 | -3.6 | -5.01 |
| Casterbridge | Stable/Ineffective | -7.6 | -7.2 | -0.7 |
| Blackmore | Erratic | 1.53 | 0.91 | -0.04 |
| Idmouth | Erratic | -1.9 | -0.8 | 2.22 |
| Egdon Heath | Erratic | -1.9 | 1.76 | -0.69 |
| Flintcomb | Erratic | -1.7 | 3.46 | -0.8 |
| Fountall | Erratic | 8.27 | -0.3 | 0.36 |
| Mellstock | Erratic | 1.66 | 7.05 | -2.5 |
| Overcombe | Erratic | -1.7 | 1.24 | -0.8 |
| Shaston | Erratic | -5.9 | 0.73 | -1.02 |
| Egdon Heath | Erratic | -0.41 | 1.09 | -0.33 |

| **Categories** | **Criteria** |
|---|---|
| *Improving/Effective:* | 94 residual negative; 95 and 96 residuals positive |
| *Stable/Effective:* | 94, 95 and 96 residuals positive |
| *Stable/Ineffective:* | 94, 95 and 96 residuals negative |
| *Declining/Ineffective* | 94 residual positive; 95 and 96 residuals negative |

## APPENDIX 24 School Improvement Model H

| School | Category | 1994 residual | 1995 residual | 1996 residual | 94 to 96 gain/loss |
|---|---|---|---|---|---|
| Bulbarrow | Improving | -2.2 | 3.75 | 1.6 | **3.8** |
| Casterbridge | Improving | -7.6 | -7.2 | -0.7 | **6.9** |
| High Stoy | Improving | 1.12 | 3.67 | 7.64 | **6.52** |
| Idmouth | Improving | -1.9 | -0.8 | 2.22 | **4.12** |
| Knollsea | Improving | 1.92 | 3.34 | 3.65 | **1.73** |
| Marygreen | Improving | -2.3 | 1.51 | 3.98 | **6.28** |
| Sandbourne | Improving | 2.07 | 2.5 | 5.86 | **3.79** |
| Aldbrickham | Declining | 0.64 | -2.4 | -2.59 | **-3.23** |
| Hintcomb | Declining | -3.3 | -3.6 | -5.01 | **-1.71** |
| Kings Hintock | Declining | 1.58 | -3.2 | -1.62 | **-3.2** |
| Lulwind | Declining | 1.82 | -3.3 | -1.32 | **-3.14** |
| Port Bredy | Declining | 0.8 | -1.5 | -2.9 | **-3.7** |
| Trantridge | Declining | 2.26 | -3.9 | -0.38 | **-2.64** |
| Budmouth | stable/effect. | 2.07 | 0 | 1.08 | **-0.99** |
| Chase | stable/effect. | 1.13 | 0.94 | 1.29 | **0.16** |
| Glaston | stable/effect. | 6.15 | 2.74 | 4.59 | **-1.56** |
| Sherton Abbas | stable/effect. | 2.6 | 1.4 | 2.46 | **-0.14** |
| Wellbridge | stable/effect. | 1.81 | 0.09 | 5.49 | **3.68** |
| Anglebury | stable/ineffect. | -3.1 | -4.1 | -2.1 | **1** |
| Marlbury | stable/ineffect. | -2.9 | -2.1 | -3.87 | **-0.97** |
| Melchester | stable/ineffect. | -1.7 | -0.1 | -1.13 | **0.57** |
| Stourhead | stable/ineffect. | -2.4 | -0.8 | -0.1 | **2.3** |
| Wingreen | stable/ineffect. | -1.2 | -1.12 | -0.09 | **1.11** |
| Wintoncester | stable/ineffect. | -1 | -0.9 | -1.66 | **-0.66** |
| Blackmore | erratic | 1.53 | 0.91 | -0.04 | **-1.57** |
| Chalk Newton | erratic | 0.32 | -4 | -0.35 | **-0.67** |
| Egdon Heath | erratic | -1.9 | 1.76 | -0.69 | **1.21** |
| Flintcomb | erratic | -1.7 | 3.46 | -0.8 | **0.9** |
| Fountall | erratic | 8.27 | -0.3 | 0.36 | **-7.91** |
| Mellstock | erratic | 1.66 | 7.05 | -2.5 | **-4.16** |
| Overcombe | erratic | -1.7 | 1.24 | -0.8 | **0.9** |
| Shaston | erratic | -5.9 | 0.73 | -1.02 | **4.88** |

| Categories | Criteria |
|---|---|
| **Improving:** | Sig. increase in residuals 94-96; 94 resid. neg; 95 & 96 resids pos. |
| **Declining:** | Sig. decline in resids 94-96; 94 resid. pos; 95 & 96 resids neg. |
| **Stable / Effective** | 94, 95 and 96 residuals all positive |
| **Stable / Ineffective** | 94, 95 and 96 residuals all negative |

# APPENDIX 25

## A rank order of correlations between responses and effectivenes using the whole sample.

| Qu. | | r |
|---|---|---|
| **3.11** | **CLB: when taught didactically as part of a whole class lesson** | **-0.372** |
| **1.9** | **Ensuring each pupil develops their reading skills to full (school goal)** | **-0.314** |
| **4.18** | **TME: when pupils given freedom to choose topics to study** | **-0.3** |
| 1.6 | Making learning enjoyable (school goal) | -0.25 |
| 3.6 | CLB: when they are regularly tested | -0.239 |
| 2.9 | Ensuring each pupil develops their reading skills to the full (class goal) | -0.237 |
| 3.13 | CLB: when mnemonics are used | -0.23 |
| 1.3 | Ensuring each pupil acquires as much maths understanding as poss (school g | -0.22 |
| 1.4 | Ensuring that each pupil uses their spare time constructively (school goa)] | -0.22 |
| 4.12 | CLB: lessons are tightly structured | -0.19 |
| 1.8 | Ensuring each pupil becomes an independent learner (school goal) | -0.179 |
| 1.5 | Ensuring each pupil acquires as much knowledge as possible (school goal) | -0.179 |
| 4.3 | TME: a variety of teaching methods are used | -0.16 |
| 3.10 | CLB: when learning is organised in mixed ability groups | -0.138 |
| 4.8 | TME: pupils are given same task but outcomes are differentiated | -0.128 |
| 1.11 | Making learning challenging (school goal) | -0.12 |
| 4.14 | TME: pupils are asked to do their own research | -0.09 |
| 2.8 | Ensuring each pupil becomes an independent learner (class goal) | -0.09 |
| 3.2 | CLB: through learning by discovery | -0.09 |
| 3.12 | CLB: when taught specific subjects rather than an integrated curric. | -0.082 |
| 4.4 | TME: The class receives whole class instruction | -0.082 |
| 2.10 | Ensuring pupils have a healthy and balanced diet (class goal) | -0.06 |
| 2.3 | Ensuring each pupil acquires as much maths understanding as possible (class | -0.017 |
| 2.7 | Preparing each pupil for the demands of secondary education (class goal) | -0.013 |
| 1.10 | Ensuring pupils have a healthy and balanced diet (school goal) | -0.01 |
| 2.6 | Making learning enjoyable (class goal) | -0.01 |
| 4.1 | TME: teachers have high expectations | -0.01 |
| 4.16 | TME: tasks are directly relevant to the child's interests | 0 |
| 3.9 | CLB: when learning is enjoyable | 0.002 |
| 1.12 | Ensuring pupils are happy (school goal) | 0.002 |
| 1.7 | Preparing each pupil for the demands of secondary education [school goal] | 0.009 |
| 4.2 | TME: pupils are given tasks which are graded in difficulty | 0.027 |
| 3.14 | CLB: when they are given the freedom to choose which topics to study | 0.03 |
| 2.1 | Fostering a pupil's spiritual development (class goal) | 0.03 |
| 3.5 | CLB: working in classes or groups of pupils of similar ability | 0.033 |
| 4.6 | TME: pupils all face the teacher | 0.035 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 25

## A rank order of correlations between responses and effectivenes using the whole sample.

| Qu. | | r |
|---|---|---|
| 4.10 | TME: books are marked regularly | 0.051 |
| 1.2 | Ensuring each pupil reaches highest NC AT (school goal) | 0.059 |
| 4.17 | TME: an integrated topic based approach is used | 0.066 |
| 1.13 | Ensuring each pupils writing skills are fully developed (school goal) | 0.069 |
| 4.20 | TME: lesson objectives are planned in advance | 0.08 |
| 1.1 | Fostering a pupil's spiritual development [school goal] | 0.081 |
| 2.13 | Ensuring each pupils writing skills are fully developed (class goal) | 0.087 |
| 4.14 | TME: when the subject matter is complex/challenging | 0.09 |
| 4.13 | TME: pupils work frequently in groups | 0.097 |
| 2.4 | Ensuring that each pupil uses their spare time constructively [class goal] | 0.102 |
| 3.3 | CLB: working with other children rather than on their own | 0.106 |
| 4.9 | CLB: pupils given clear responsibility for own learning | 0.112 |
| 2.5 | Ensuring each pupil acquires as much knowledge as possible (class goal) | 0.121 |
| 2.12 | Ensuring pupils are happy (class goal) | 0.151 |
| 3.4 | CLB: when their work is regularly marked | 0.168 |
| 4.5 | TME: pupils are regularly tested | 0.189 |
| 3.7 | CLB: when they receive regular homework | 0.196 |
| 4.15 | TME: tasks are set which are differentiated according to ability | 0.211 |
| 4.19 | TME: HT frequently monitors what is happening in the classroom | 0.213 |
| 3.1 | CLB: by doing rather than listening | 0.218 |
| 2.2 | Ensuring each pupil reaches highest NC AT (class goal) | 0.242 |
| 4.7 | TME: Pupils have clear idea of objectives of lesson | 0.248 |
| **2.11** | **Making learning challenging (class goal)** | **0.297** |
| **3.8** | **CLB: when provided with work which is demanding** | **0.368** |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 26

## Question Clusters to show correlations between responses and effectiveness using the whole sample

| | | r |
|---|---|---|
| | **INDEPENDENT LEARNERS** | |
| 1.8 | ensuring each pupil becomes independent learner (school goal) | -0.179 |
| 2.8 | ensuring each pupil becomes independent learner (class goal) | -0.09 |
| 4.9 | CLB: pupils given clear responsibility for own learning | 0.112 |
| | **STRUCTURED LESSONS** | |
| 4.12 | CLB: lessons are tightly structured | -0.19 |
| | **SCHOOL ACADEMIC GOALS** | |
| 1.2 | ensuring each pupil reaches highest NC AT | 0.059 |
| 1.3 | ensuring each pupil acquires as much maths understanding as poss. | -0.22 |
| 1.5 | ensuring each pupil acquires as much knowledge as possible | -0.179 |
| 1.9 | ensuring each pupil develops their reading skills to the full | -0.314 |
| 1.13 | ensuring each pupils writing skills are fully developed | 0.069 |
| | **DIFFERENTIATION** | |
| 3.5 | CLB: working in classes / groups of pupils of similar ability | 0.033 |
| 3.10 | CLB: when learning is organised in mixed ability groups | -0.138 |
| 4.2 | TME: pupils are given tasks which are graded in difficulty | 0.027 |
| 4.8 | TME: pupils are given same task but outcomes are differentiated | -0.128 |
| 4.15 | TME: tasks are set which are differentiated according to ability | 0.211 |
| | **CLASSROOM ACADEMIC GOALS** | |
| 2.2 | ensuring each pupil reaches highest NC AT | 0.242 |
| 2.3 | ensuring each pupil acquires as much maths understanding as poss | -0.017 |
| 2.5 | ensuring each pupil acquires as much knowledge as possible | 0.121 |
| 2.9 | ensuring each pupil develops their reading skills to the full | -0.237 |
| 2.13 | ensuring each pupils writing skills are fully developed | 0.087 |
| | **HOMEWORK** | |
| 3.7 | CLB: when they receive regular homework | 0.196 |
| | **COOPERATIVE LEARNING** | |
| 3.3 | CLB: working with other children rather than on their own | 0.106 |
| 4.13 | TME: pupils work frequently in groups | 0.097 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 26

## Question Clusters to show correlations between responses and effectiveness using the whole sample

| | | |
|---|---|---|
| | **WHOLE CLASS INSTRUCTION** | |
| **3.11** | **CLB: When taught didactically as part of a whole class lesson** | **-0.372** |
| 4.4 | TME: The class receives whole class instruction | -0.082 |
| 4.6 | TME: Pupils all face the teacher | 0.035 |
| | **HT MONITORING** | |
| 4.19 | TME: HT frequently monitors what is happening in the classroom | 0.213 |
| | **TESTING** | |
| 3.6 | CLB: when they are regularly tested | -0.239 |
| 4.5 | TME: pupils are regularly tested | 0.189 |
| | **PREPARING for SECONDARY EDUCATION** | |
| 1.7 | Preparing each pupil for the demands of secondary education | 0.009 |
| 2.7 | Preparing each pupil for the demands of secondary education | -0.013 |
| | **INTEGRATED SUBJECTS** | |
| 3.12 | CLB: when taught specific subjects rather than an integrated curric. | -0.082 |
| 4.17 | TME: an integrated topic based approach is used | 0.066 |
| | **MARKING** | |
| 3.4 | CLB: when their work is regularly marked | 0.168 |
| 4.10 | TME: books are marked regularly | 0.051 |
| | **DISCOVERY LEARNING** | |
| 3.2 | CLB: through learning by discovery | -0.09 |
| 4.14 | TME: pupils are asked to do their own research | -0.09 |
| | **HIGHER ORDER THINKING SKILLS** | |
| 1.11 | Making learning challenging (school goal) | -0.12 |
| **2.11** | **Making learning challenging (class goal)** | **0.297** |
| **3.8** | **CLB: When provided with work which is demanding** | **0.368** |
| 3.13 | CLB: when mnemonics are used | -0.23 |
| 4.14 | TME: when the subject matter is complex/challenging | 0.09 |
| | **CLEAR OBJECTIVES** | |
| 4.7 | TME: Pupils have clear idea of objectives of lesson | 0.248 |
| 4.20 | TME: Lesson objectives are planned in advance | 0.08 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 26

## Question Clusters to show correlations between responses and effectiveness using the whole sample

| | | |
|---|---|---|
| | **HIGH EXPECTATIONS** | |
| 4.1 | TME: Teachers have high expectations | -0.01 |
| | **ACTIVE LEARNING** | |
| 3.1 | CLB: by doing rather than listening | 0.218 |
| | **LEARNING ENJOYABLE** | |
| 1.6 | Making learning enjoyable (school goal) | -0.25 |
| 1.12 | Ensuring pupils are happy (school goal) | 0.002 |
| 2.6 | Making learning enjoyable (class goal) | -0.01 |
| 2.12 | Ensuring pupils are happy (class goal) | 0.151 |
| 3.9 | CLB: when learning is enjoyable | 0.002 |
| | **VARIETY OF METHODS** | |
| 4.3 | TME: a variety of teaching methods are used | -0.16 |
| | **CHILD'S INTERESTS** | |
| 3.14 | CLB: when they are given the freedom to choose which topics to study | 0.03 |
| 4.16 | TME: Tasks are directly relevant to the child's interests | 0 |
| **4.18** | **TME: when they are given the freedom to choose which topics to** | **-0.3** |
| | **SPIRITUAL WELFARE** | |
| 1.1 | Fostering a pupil's spiritual development [school goal] | 0.081 |
| 2.1 | Fostering a pupil's spiritual development [class goal] | 0.03 |
| | **HEALTHY DIET** | |
| 1.10 | Ensuring pupils have a healthy and balanced diet (school goal) | -0.01 |
| 2.10 | Ensuring pupils have a healthy and balanced diet (class goal) | -0.06 |
| | **USE OF SPARE TIME** | |
| 1.4 | Ensuring each pupil uses spare time out of school constructively (scho | -0.22 |
| 2.4 | Ensuring each pupil uses spare time out of school constructively (class | 0.102 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 27

## Question clusters to compare mean responses of the effectiveness outlier groups

| QU. | | Improve | Decline | Diff. |
|---|---|---|---|---|
| | **INDEPENDENT LEARNERS** | | | |
| 1.8 | ensuring each pupil becomes independent learner | 1.07 | 1.13 | -0.06 |
| 2.8 | ensuring each pupil becomes independent learner | 1.06 | 1.18 | -0.12 |
| 4.9 | CLB: pupils given clear responsibility for own learning | 2.06 | 1.69 | 0.37 |
| | **STRUCTURED LESSONS** | | | |
| 4.1 | CLB: lessons are tightly structured | 2.25 | 2.14 | 0.11 |
| | **SCHOOL ACADEMIC GOALS** | | | |
| 1.2 | ensuring each pupil reaches highest NC AT | 1.19 | 1.31 | -0.12 |
| 1.3 | ensuring each pupil acquires as much maths understanding as poss. | 1.19 | 1.46 | -0.27 |
| **1.5** | **ensuring each pupil acquires as much knowledge as possible** | **1.44** | **2.27** | **-0.83** |
| 1.9 | ensuring each pupil develops their reading skills to the full | 1 | 1.08 | -0.08 |
| 1.1 | ensuring each pupils writing skills are fully developed | 1.13 | 1.08 | 0.05 |
| | **DIFFERENTIATION** | | | |
| 3.5 | CLB: working in classes / groups of pupils of similar ability | 2.44 | 2.54 | -0.1 |
| 3.10 | CLB: when learning is organised in mixed ability groups | 2.94 | 3.08 | -0.14 |
| 4.2 | TME: pupils are given tasks which are graded in difficulty | 1.44 | 1.31 | 0.13 |
| 4.8 | TME: pupils are given same task but outcomes are differentiated | 2.19 | 2.46 | -0.27 |
| 4.2 | TME: tasks are set which are differentiated according to ability | 1.63 | 1.39 | 0.24 |
| | **CLASSROOM ACADEMIC GOALS** | | | |
| 2.2 | ensuring each pupil reaches highest NC AT | 1.25 | 1.18 | 0.07 |
| 2.3 | ensuring each pupil acquires as much maths understanding as poss. | 1.13 | 1.36 | -0.23 |
| 2.5 | ensuring each pupil acquires as much knowledge as possible | 1.44 | 1.64 | -0.2 |
| 2.9 | ensuring each pupil develops their reading skills to the full | 1 | 1.09 | -0.09 |
| 2.1 | ensuring each pupils writing skills are fully developed | 1.19 | 1.27 | -0.08 |
| | **HOMEWORK** | | | |
| 3.7 | CLB: when they receive regular homework | 3.2 | 3.15 | 0.05 |
| | **COOPERATIVE LEARNING** | | | |
| 3.3 | CLB: working with other children rather than on their own | 2.38 | 2.46 | -0.08 |
| 4.1 | TME: pupils work frequently in groups | 2.5 | 2.31 | 0.19 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 27

## Question clusters to compare mean responses of the effectiveness outlier groups

| QU. | | Improve | Decline | Diff. |
|---|---|---|---|---|
| | **WHOLE CLASS INSTRUCTION** | | | |
| **3.1** | **CLB: When taught didactically as part of a whole class lesson** | **2.56** | **3.23** | **-0.67** |
| 4.4 | TME: The class receives whole class instruction | 2.44 | 2.54 | -0.1 |
| 4.6 | TME: Pupils all face the teacher | 3.19 | 3.04 | 0.15 |
| | **HT MONITORING** | | | |
| 4.2 | TME: HT frequently monitors what is happening in the classroom | 2.31 | 2.23 | 0.08 |
| | **TESTING** | | | |
| 3.6 | CLB: when they are regularly tested | 3 | 3.31 | -0.31 |
| 4.5 | TME: pupils are regularly tested | 2.9 | 3.08 | -0.18 |
| | **PREPARING for SECONDARY EDUCATION** | | | |
| 1.7 | Preparing each pupil for the demands of secondary education | 1.75 | 1.77 | -0.02 |
| 2.7 | Preparing each pupil for the demands of secondary education | 2 | 2.36 | -0.36 |
| | **INTEGRATED SUBJECTS** | | | |
| 3.1 | CLB: when taught specific subjects rather than an integrated curric. | 2.81 | 3.31 | -0.5 |
| 4.2 | TME: an integrated topic based approach is used | 2.88 | 2.39 | 0.49 |
| | **MARKING** | | | |
| 3.4 | CLB: when their work is regularly marked | 1.69 | 1.39 | 0.3 |
| 4.10 | TME: books are marked regularly | 1.75 | 1.71 | 0.04 |
| | **DISCOVERY LEARNING** | | | |
| 3.2 | CLB: through learning by discovery | 2 | 2.07 | -0.07 |
| 4.1 | TME: pupils are asked to do their own research | 2.25 | 2.31 | -0.06 |
| | **HIGHER ORDER THINKING SKILLS** | | | |
| 1.1 | Making learning challenging | 1.32 | 1.32 | 0 |
| 2.1 | Making learning challenging | 1.25 | 1.14 | 0.11 |
| 3.8 | CLB: When provided with work which is demanding | 2 | 1.61 | 0.39 |
| 3.1 | CLB: when mnemonics are used | 2.44 | 2.7 | -0.26 |
| 4.1 | TME: when the subject matter is complex/challenging | 2.56 | 2.24 | 0.32 |
| | **CLEAR OBJECTIVES** | | | |
| 4.7 | TME: Pupils have clear idea of objectives of lesson | 1.44 | 1.2 | 0.24 |
| 4.20 | TME: Lesson objectives are planned in advance | 1.38 | 1.21 | 0.17 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 27

## Question clusters to compare mean responses of the effectiveness outlier groups

| QU. | | Improve | Decline | Diff. |
|---|---|---|---|---|
| | **HIGH EXPECTATIONS** | | | |
| 4.1 | TME: Teachers have high expectations | 1.06 | 1.06 | 0 |
| | **ACTIVE LEARNING** | | | |
| **3.1** | **CLB: by doing rather than listening** | **2.19** | **1.73** | **0.46** |
| | **LEARNING ENJOYABLE** | | | |
| 1.6 | Making learning enjoyable | 1.13 | 1.15 | -0.02 |
| 1.1 | Ensuring pupils are happy | 1.19 | 1.19 | 0 |
| 2.6 | Making learning enjoyable | 1.13 | 1.09 | 0.04 |
| 2.1 | Ensuring pupils are happy | 1.25 | 1.16 | 0.09 |
| 3.9 | CLB: when learning is enjoyable | 1.31 | 1.27 | 0.04 |
| | **VARIETY OF METHODS** | | | |
| 4.3 | TME: a variety of teaching methods are used | 1.13 | 1.18 | -0.05 |
| | **CHILD'S INTERESTS** | | | |
| 3.1 | CLB: when given the freedom to choose which topics to study | 3.69 | 3.32 | 0.37 |
| 4.2 | TME: Tasks are directly relevant to the child's interests | 2.5 | 2.32 | 0.18 |
| 4.2 | TME: when given the freedom to choose which topics to study | 3.38 | 3.3 | 0.08 |
| | **SPIRITUAL WELFARE** | | | |
| 1.1 | Fostering a pupil's spiritual development [school goal] | 2.19 | 1.97 | 0.22 |
| 2.1 | Fostering a pupil's spiritual development [class goal] | 2.25 | 2.23 | 0.02 |
| | **HEALTHY DIET** | | | |
| 1.10 | Ensuring pupils have a healthy and balanced diet (school goal) | 2 | 2.4 | -0.4 |
| 2.10 | Ensuring pupils have a healthy and balanced diet (class goal) | 2.06 | 2.49 | -0.43 |
| | **USE OF SPARE TIME** | | | |
| 1.4 | Ensuring each pupil uses spare time constructively (school goal) | 2.44 | 2.81 | -0.37 |
| 2.4 | Ensuring each pupil uses spare time constructively (class goal) | 2.5 | 2.76 | -0.26 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

## A rank order of correlations between responses and effectivenes using the whole sample.

| Qu. | | r |
|---|---|---|
| 4.5 | TME: pupils are regularly tested | -0.33 |
| 1.13 | Ensuring each pupils writing skills are fully developed | -0.33 |
| 4.3 | TME: a variety of teaching methods are used | -0.33 |
| 3.6 | CLB: when they are regularly tested | -0.29 |
| 1.6 | Making learning enjoyable | -0.27 |
| 4.20 | TME: Lesson objectives are planned in advance | -0.25 |
| 2.3 | Ensuring each pupil acquires as much maths understanding as poss | -0.22 |
| 4.15 | TME: Tasks are set which are differentiated according to ability | -0.2 |
| 4.2 | TME: Pupils are given tasks which are graded in difficulty | -0.2 |
| 4.1 | TME: Teachers have high expectations | -0.2 |
| 1.3 | Ensuring each pupil acquires as much maths understanding as poss | -0.18 |
| 2.1 | Fostering a pupil's spiritual development | -0.17 |
| 4.18 | TME When pupils are given the freedom to choose | -0.17 |
| 4.6 | TME: Pupils all face the teacher | -0.17 |
| 3.13 | CLB: when mnemonics are used | -0.15 |
| 3.1 | CLB: by doing rather than listening | -0.14 |
| 4.19 | TME: HT frequently monitors what is happening in the classroom | -0.13 |
| 1.11 | Making learning challenging | -0.12 |
| 1.9 | Ensuring each pupil develops their reading skills to the full | -0.11 |
| 1.12 | Ensuring pupils are happy | -0.1 |
| 3.5 | CLB working in classes / groups of pupils of similar ability | -0.1 |
| 3.2 | CLB: through learning by discovery | -0.09 |
| 1.8 | Ensuring each pupil becomes independent learner | -0.08 |
| 4.4 | TME: The class receives whole class instruction | -0.06 |
| 3.14 | CLB when they are given the freedom to choose which topics to study | -0.06 |
| 3.11 | CLB: When taught didactically as part of a whole class lesson | -0.06 |
| 1.1 | Fostering a pupil's spiritual development | -0.05 |
| 2.13 | Ensuring each pupils writing skills are fully developed | -0.043 |
| 4.16 | TME: Tasks are directly relevant to the child's interests | -0.04 |
| 2.5 | Ensuring each pupil acquires as much knowledge as possible | -0.04 |
| 4.17 | TME: An integrated topic based approach is used | -0.04 |
| 4.12 | CLB Lessons are tightly structured | -0.037 |
| 2.8 | Ensuring each pupil becomes ind.learner | -0.01 |
| 4.9 | CLB Pupils given clear responsibility for own learning | -0.01 |
| 1.10 | Ensuring pupils have a healthy and balanced diet | 0 |
| 3.10 | CLB when learning is organised in mixed ability groups | 0 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 28

## A rank order of correlations between responses and effectivenes using the whole sample.

| Qu. | | r |
|---|---|---|
| 2.12 | Ensuring pupils are happy | 0 |
| 2.6 | Making learning enjoyable | 0.01 |
| 1.2 | ensuring each pupil reaches highest NC AT | 0.026 |
| 4.10 | TME: books are marked regularly | 0.03 |
| 3.7 | CLB: when they receive regular homework | 0.042 |
| 2.4 | Ensuring that each pupil uses their spare time | 0.05 |
| 3.9 | CLB: when learning is enjoyable | 0.05 |
| 2.9 | ensuring each pupil develops their reading skills to the full | 0.08 |
| 4.14 | TME: pupils are asked to do their own research | 0.11 |
| 1.7 | Preparing each pupil for the demands of secondary education | 0.11 |
| 4.7 | TME: Pupils have clear idea of objectives of lesson | 0.12 |
| 1.5 | ensuring each pupil acquires as much knowledge as possible | 0.12 |
| 3.12 | C.L.B: when taught specific subjects rather than an integrated curric. | 0.12 |
| 4.13 | TME: pupils work frequently in groups | 0.13 |
| 3.8 | CLB: When provided with work which is demanding | 0.14 |
| 2.2 | ensuring each pupil reaches highest NC AT | 0.14 |
| 3.4 | CLB: when their work is regularly marked | 0.15 |
| 2.11 | Making learning challenging | 0.15 |
| 4.14 | TME: when the subject matter is complex/challenging | 0.2 |
| 1.4 | Ensuring that each pupil uses their spare time | 0.2 |
| 2.7 | Preparing each pupil for the demands of secondary education | 0.24 |
| 4.8 | TME:Pupils are given same task but outcomes are differentiated | 0.29 |
| 2.10 | Ensuring pupils have a healthy and balanced diet | 0.29 |
| **3.3** | **CLB: working with other children rather than on their own** | **0.41** |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 29

## Question Clusters to show correlations between responses of the whole sample and improvement

| | | r |
|---|---|---|
| | **INDEPENDENT LEARNERS** | |
| 1.8 | ensuring each pupil becomes independent learner | -0.08 |
| 2.8 | ensuring each pupil becomes independent learner | -0.01 |
| 4.9 | CLB: pupils given clear responsibility for own learning | -0.01 |
| | **STRUCTURED LESSONS** | |
| 4.12 | CLB: lessons are tightly structured | -0.037 |
| | **SCHOOL ACADEMIC GOALS** | |
| 1.2 | ensuring each pupil reaches highest NC AT | 0.026 |
| 1.3 | ensuring each pupil acquires as much maths understanding as poss | -0.18 |
| 1.5 | ensuring each pupil acquires as much knowledge as possible | 0.12 |
| 1.9 | ensuring each pupil develops their reading skills to the full | -0.11 |
| **1.13** | **ensuring each pupils writing skills are fully developed** | **-0.33** |
| | **DIFFERENTIATION** | |
| 3.5 | CLB: working in classes / groups of pupils of similar ability | -0.1 |
| 3.10 | CLB: when learning is organised in mixed ability groups | 0 |
| 4.2 | TME: pupils are given tasks which are graded in difficulty | -0.2 |
| 4.8 | TME: pupils are given same task but outcomes are differentiated | 0.29 |
| 4.15 | TME: tasks are set which are differentiated according to ability | -0.2 |
| | **CLASSROOM ACADEMIC GOALS** | |
| 2.2 | ensuring each pupil reaches highest NC AT | 0.14 |
| 2.3 | ensuring each pupil acquires as much maths understanding as poss | -0.22 |
| 2.5 | ensuring each pupil acquires as much knowledge as possible | -0.04 |
| 2.9 | ensuring each pupil develops their reading skills to the full | 0.08 |
| 2.13 | ensuring each pupils writing skills are fully developed | -0.043 |
| | **HOMEWORK** | |
| 3.7 | CLB: when they receive regular homework | 0.042 |
| | **COOPERATIVE LEARNING** | |
| **3.3** | **CLB: working with other children rather than on their own** | **0.41** |
| 4.13 | TME: pupils work frequently in groups | 0.13 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 29

## Question Clusters to show correlations between responses of the whole sample and improvement

| | | |
|---|---|---|
| | **WHOLE CLASS INSTRUCTION** | |
| 3.11 | CLB: When taught didactically as part of a whole class lesson | -0.06 |
| 4.4 | TME: The class receives whole class instruction | -0.06 |
| 4.6 | TME: Pupils all face the teacher | -0.17 |
| | **HT MONITORING** | |
| 4.19 | TME: HT frequently monitors what is happening in the classroom | -0.13 |
| | **TESTING** | |
| 3.6 | CLB: when they are regularly tested | -0.29 |
| **4.5** | **TME: pupils are regularly tested** | **-0.33** |
| | **PREPARING for SECONDARY EDUCATION** | |
| 1.7 | Preparing each pupil for the demands of secondary education | 0.11 |
| 2.7 | Preparing each pupil for the demands of secondary education | 0.24 |
| | **INTEGRATED SUBJECTS** | |
| 3.12 | CLB: when taught specific subjects rather than an integrated curric. | 0.12 |
| 4.17 | TME: an integrated topic based approach is used | -0.04 |
| | **MARKING** | |
| 3.4 | CLB: when their work is regularly marked | 0.15 |
| 4.1o | TME: books are marked regularly | 0.03 |
| | **DISCOVERY LEARNING** | |
| 3.2 | CLB: through learning by discovery | -0.09 |
| 4.14 | TME: pupils are asked to do their own research | 0.11 |
| | **HIGHER ORDER THINKING SKILLS** | |
| 1.11 | Making learning challenging | -0.12 |
| 2.11 | Making learning challenging | 0.15 |
| 3.8 | CLB: When provided with work which is demanding | 0.14 |
| 3.13 | CLB: when mnemonics are used | -0.15 |
| 4.14 | TME: when the subject matter is complex/challenging | 0.2 |
| | **CLEAR OBJECTIVES** | |
| 4.7 | TME: Pupils have clear idea of objectives of lesson | 0.12 |
| 4.20 | TME: Lesson objectives are planned in advance | -0.25 |

**Glossary**

TME = Teaching is most effective when

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# APPENDIX 29

r

## Question Clusters to show correlations between responses of the whole sample and improvement

| | | r |
|---|---|---|
| | **HIGH EXPECTATIONS** | |
| 4.1 | TME: Teachers have high expectations | -0.2 |
| | **ACTIVE LEARNING** | |
| 3.1 | CLB: by doing rather than listening | -0.14 |
| | **LEARNING ENJOYABLE** | |
| 1.6 | Making learning enjoyable | -0.27 |
| 1.12 | Ensuring pupils are happy | -0.1 |
| 2.6 | Making learning enjoyable | 0.01 |
| 2.12 | Ensuring pupils are happy | 0 |
| 3.9 | CLB: when learning is enjoyable | 0.05 |
| | **VARIETY OF METHODS** | |
| **4.3** | **TME: a variety of teaching methods are used** | **-0.33** |
| | **CHILD'S INTERESTS** | |
| 3.14 | CLB: when they are given the freedom to choose which topics to study | -0.06 |
| 4.16 | TME: Tasks are directly relevant to the child's interests | -0.04 |
| **4.18** | TME: when they are given the freedom to choose which topics to study | -0.17 |
| | **SPIRITUAL WELFARE** | |
| 1.1 | Fostering a pupil's spiritual development [school goal] | -0.05 |
| 2.1 | Fostering a pupil's spiritual development [class goal] | -0.17 |
| | **HEALTHY DIET** | |
| 1.10 | Ensuring pupils have a healthy and balanced diet (school goal) | 0 |
| 2.10 | Ensuring pupils have a healthy and balanced diet (class goal) | 0.29 |
| | **USE OF SPARE TIME** | |
| 1.4 | Ensuring each pupil uses spare time out of school constructively | 0.2 |
| 2.4 | Ensuring each pupil uses spare time out of school constructively | 0.05 |

**Glossary**

TME = Teaching is most effective when

CLB = Children learn best when

# APPENDIX 30

## Question clusters to compare mean responses of improving/declining outlier groups

| QU. | | Improve | Decline | *Diff.* |
|---|---|---|---|---|
| | **INDEPENDENT LEARNERS** | | | |
| 1.8 | ensuring each pupil becomes independent learner | 1.07 | 1.06 | **0.01** |
| 2.8 | ensuring each pupil becomes independent learner | 1.14 | 1 | **0.14** |
| 4.9 | CLB: pupils given clear responsibility for own learning | 2 | 1.88 | **0.12** |
| | **STRUCTURED LESSONS** | | | |
| 4.12 | CLB: lessons are tightly structured | 2.36 | 2.19 | **0.17** |
| | **SCHOOL ACADEMIC GOALS** | | | |
| 1.2 | ensuring each pupil reaches highest NC AT | 1.07 | 1.13 | **-0.06** |
| 1.3 | ensuring each pupil acquires as much maths understanding as poss | 1.07 | 1.31 | **-0.24** |
| 1.5 | ensuring each pupil acquires as much knowledge as possible | 1.53 | 1.73 | **-0.2** |
| 1.9 | ensuring each pupil develops their reading skills to the full | 1 | 1.1 | **-0.1** |
| 1.13 | ensuring each pupils writing skills are fully developed | 1.07 | 1.19 | **-0.12** |
| | **DIFFERENTIATION** | | | |
| 3.5 | CLB: working in classes / groups of pupils of similar ability | 2.53 | 2.13 | **0.4** |
| 3.10 | CLB: when learning is organised in mixed ability groups | 2.9 | 2.94 | **-0.04** |
| 4.2 | TME: pupils are given tasks which are graded in difficulty | 1.36 | 1.67 | **-0.31** |
| 4.8 | TME: pupils are given same task but outcomes are differentiated | 2.47 | 2.19 | **0.28** |
| 4.15 | TME: tasks are set which are differentiated according to ability | 1.64 | 1.63 | **0.01** |
| | **CLASSROOM ACADEMIC GOALS** | | | |
| 2.2 | ensuring each pupil reaches highest NC AT | 1.36 | 1.19 | **0.17** |
| 2.3 | ensuring each pupil acquires as much maths understanding as poss | 1.01 | 1.31 | **-0.3** |
| 2.5 | ensuring each pupil acquires as much knowledge as possible | 1.61 | 1.63 | **-0.02** |
| 2.9 | ensuring each pupil develops their reading skills to the full | 1.07 | 1.06 | **0.01** |
| 2.13 | ensuring each pupils writing skills are fully developed | 1.14 | 1.25 | **-0.11** |
| | **HOMEWORK** | | | |
| 3.7 | CLB: when they receive regular homework | 3.36 | 3.27 | **0.09** |
| | **COOPERATIVE LEARNING** | | | |
| 3.3 | CLB: working with other children rather than on their own | 2.79 | 2.27 | **0.52** |
| 4.13 | TME: pupils work frequently in groups | 2.53 | 2.25 | **0.28** |

**Glossary**

TME = Teaching is most effective when

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# APPENDIX 30

## Question clusters to compare mean responses of improving/declining outlier groups

| QU. | | Improve | Decline | *Diff.* |
|---|---|---|---|---|
| | **HT MONITORING** | | | |
| 4.19 | TME: HT frequently monitors what is happening in the classroom | 2.5 | 2.44 | **0.06** |
| | **WHOLE CLASS INSTRUCTION** | | | |
| 3.11 | CLB: When taught didactically as part of a whole class lesson | 2.8 | 2.75 | **0.05** |
| 4.4 | TME: The class receives whole class instruction | 2.14 | 2.4 | **-0.26** |
| 4.6 | TME: Pupils all face the teacher | 2.79 | 3.13 | **-0.34** |
| | **TESTING** | | | |
| 3.6 | CLB: when they are regularly tested | 3.07 | 3.38 | **-0.31** |
| **4.5** | **TME: pupils are regularly tested** | **2.54** | **3.31** | **-0.77** |
| | **PREPARING for SECONDARY EDUCATION** | | | |
| 1.7 | Preparing each pupil for the demands of secondary education | 1.73 | 1.56 | **0.17** |
| 2.7 | Preparing each pupil for the demands of secondary education | 2.07 | 1.69 | **0.38** |
| | **INTEGRATED SUBJECTS** | | | |
| 3.12 | CLB: when taught specific subjects rather than an integrated curric. | 2.73 | 2.81 | **-0.08** |
| 4.17 | TME: an integrated topic based approach is used | 2.71 | 2.69 | **0.02** |
| | **MARKING** | | | |
| 3.4 | CLB: when their work is regularly marked | 1.87 | 1.63 | **0.24** |
| 4.10 | TME: books are marked regularly | 1.73 | 1.87 | **-0.14** |
| | **DISCOVERY LEARNING** | | | |
| 3.2 | CLB: through learning by discovery | 1.8 | 2.1 | **-0.3** |
| 4.14 | TME: pupils are asked to do their own research | 2.33 | 2.38 | **-0.05** |
| | **HIGHER ORDER THINKING SKILLS** | | | |
| 1.11 | Making learning challenging | 1.21 | 1.31 | **-0.1** |
| 2.11 | Making learning challenging | 1.36 | 1.26 | **0.1** |
| 3.8 | CLB: When provided with work which is demanding | 1.93 | 1.82 | **0.11** |
| 3.13 | CLB: when mnemonics are used | 2.57 | 2.86 | **-0.29** |
| 4.14 | TME: when the subject matter is complex/challenging | 2.53 | 2.5 | **0.03** |
| | **CLEAR OBJECTIVES** | | | |
| 4.7 | TME: Pupils have clear idea of objectives of lesson | 1.33 | 1.31 | **0.02** |
| 4.20 | TME: Lesson objectives are planned in advance | 1.2 | 1.56 | **-0.36** |

**Glossary**

TME = Teaching is most effective when

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# APPENDIX 30

## Question clusters to compare mean responses of improving/declining outlier groups

| QU. | | Improve | Decline | *Diff.* |
|---|---|---|---|---|
| | **HIGH EXPECTATIONS** | | | |
| 4.1 | TME: Teachers have high expectations | 1.08 | 1.14 | **-0.06** |
| | **ACTIVE LEARNING** | | | |
| 3.1 | CLB: by doing rather than listening | 1.8 | 1.88 | **-0.08** |
| | **LEARNING ENJOYABLE** | | | |
| 1.6 | Making learning enjoyable | 1 | 1.25 | **-0.25** |
| 1.12 | Ensuring pupils are happy | 1.07 | 1.28 | **-0.21** |
| 2.6 | Making learning enjoyable | 1.07 | 1.23 | **-0.16** |
| 2.12 | Ensuring pupils are happy | 1.25 | 1.25 | **0** |
| 3.9 | CLB: when learning is enjoyable | 1.2 | 1.31 | **-0.11** |
| | **VARIETY OF METHODS** | | | |
| 4.3 | TME: a variety of teaching methods are used | 1.14 | 1.38 | **-0.24** |
| | **CHILD'S INTERESTS** | | | |
| 3.14 | CLB: when given the freedom to choose which topics to study | 3.17 | 3.5 | **-0.33** |
| 4.16 | TME: Tasks are directly relevant to the child's interests | 2.21 | 2.63 | **-0.42** |
| 4.18 | TME: when given the freedom to choose which topics to study | 3.21 | 3.56 | **-0.35** |
| | **SPIRITUAL WELFARE** | | | |
| 1.1 | Fostering a pupil's spiritual development [school goal] | 1.8 | 1.81 | **-0.01** |
| 2.1 | Fostering a pupil's spiritual development [class goal] | 2.07 | 1.88 | **0.19** |
| | **HEALTHY DIET** | | | |
| 1.10 | Ensuring pupils have a healthy and balanced diet (school goal) | 2.21 | 2.31 | **-0.1** |
| 2.10 | Ensuring pupils have a healthy and balanced diet (class goal) | 2.5 | 2.25 | **0.25** |
| | **USE OF SPARE TIME** | | | |
| 1.4 | Ensuring each pupil uses spare time constructively (school goal) | 2.64 | 2.44 | **0.2** |
| 2.4 | Ensuring each pupil uses spare time constructively (class goal) | 2.69 | 2.44 | **0.25** |

**Glossary**

TME = Teaching is most effective when

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## APPENDIX 31

## A summary of recent school effectiveness research into British primary schools

| Study | Database | Location | Date | Research Focus | Reading outcome measures |
|---|---|---|---|---|---|
| Mortimore et al. (1988) | 50 junior schools; 2000 pupils aged 7 | Inner London | 1980-1984 | progress: school and classroom factors | Edinburgh Reading Test |
| Bondi (1991) | 3769 pupils P3 (7/8) and P7 (11/12) | one Scottish education authority - no large cities | 1976; 1980 | attainment: school factors | Edinburgh Reading Test |
| Sammons et al. (1993) | 50 junior schools; 2000 pupils aged 7 and 9 | Inner London | 1980-1984 | progress: school factors | Edinburgh Reading Test |
| Hutchinson (1993) | 55 schools; 2568 pupils aged 6-8 | An LEA in the south of England | 1988-1990 | progress: school factors | "commercially available test standardised for the LEA" (p. 32) |
| Sammons et al. (1995b) | 995 pupils aged 10/11 | Inner London | 1984 | progress: school factors | London Reading Test |
| Goldstein and Sammons (1997) | 48 junior schools; 758 pupils aged 10/11 | Inner London | 1984 | progress: school factors | London Reading Test |
| Sammons et al. (1997b) | 62 primary schools; 2400 pupils aged 6/7 | Inner London | 1992 | attainment: school factors | KS1 assessments |
| Strand (1997) | 57 schools; pupils aged 4 - 7 | Inner London | 1992-5 | progress: school factors | LARR test of Emergent Literacy; KS1 tests |
| Sammons et al. (1998) | 44 primary schools; pupils aged 8/9; 10/11 | wide distribution of Scottish schools | 1995;1997 | attainment and progress: school factors | Scottish Assessment of Achievement Programme; Suffolk Reading Test. |

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